AR-727H

Technical Manual

26 August 2008

Version 1.10

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SYSTEM OVERVIEW

The AR-727H Controller

The AR-727H is a versatile single door proximity controller that can be used as stand-alone or networked.

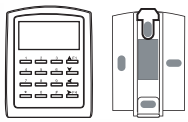
Key Features:

- **Built-in Proximity reader**
- **1,024 User card capacity, 65,536 User card capacity in stand-alone mode**
- **Tamper Switch**
- **32 floor lift control**
- **Door Monitoring**
- **Code in/Code out (with additional Wiegand Keypad)**
- **Optional Anti-pass back function with Code In/Out**
- **Optional Egress Function**
- **Network capability up to 254 x 16 doors each with Keypad In/Out**
- **Programmable Duress Code**
- **Optional Lock Output - Timed 0.1 to 600 seconds, Latched On/Latched Off**
- **Universal Serial Port for LED Display, Printer, Lift Control etc.**
- **Alarm function for Tamper, Forced Entry, Duress and Door Open**
- **Will run as a Standalone Controller during Host Controller failure**
- **Add tokens/cards using built in reader**
- **Buffer for storing up to 1,200 Transactions**
- **Auto-Relock Function**
- **Real Time Clock**
- **2x Auto Open Time Zones in Standalone mode with Firmware version 7V4 and earlier**
- **10x Auto Open Time Zones in Standalone mode with Firmware version 7V5 and later**
- **IP65 rated**

BOX CONTENTS & INSTALLATION

BOX CONTENTS

A. Controller

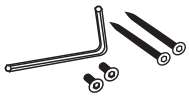


B. User Guide

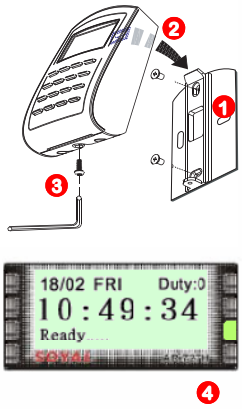
C. Connection Cables

D. Water Resistant Strip

E. Allen Key & Screws



INSTALLATION



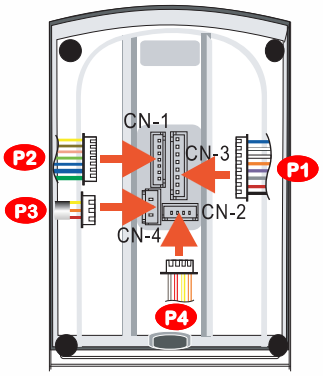
STEPS

1. Screw mounting plate to the wall.
2. Pull cable ends through the access hole in the mounting plate.
3. Attach controller to the mounting plate and install screw (supplied) into the hole at the bottom with the allen key (supplied).
4. Apply power. Sounder will emit a short beep and the green power LED & display will illuminate.

NOTICE

- **CONDUIT**
  The communication wires and power line **Should Not** be housed in the same electrical conduit. They should always be installed in separate conduit.
- **CABLE SELECTION**
  Use twisted pair and Do Not star out. This will cause problems with data to and from the readers.
- **POWER SUPPLY**
  Do Not connect the reader and lock to the same power supply. While the lock is active it can destabilize the power supply and effect the readers function. The standard connection of the power supply is to connect the door relay and lock to one power supply and the reader on a separate power supply.

CONNECTOR DIAGRAM



P1 Table1: CN-3 Colour Coding

Wire Application	Wire	Colour	Description
Door Relay	1	Blue/White	NO 24VDC 1A
	2	Purple/White	NC 24VDC 1A
Door/Alarm Relay	3	White	COM 24VDC 1A
Door Sensor	4	Orange	Negative Trigger Input
Exit Switch	5	Purple	Negative Trigger Input
Alarm Relay	6	Grey	NO/NC Optional (By Jumper)
Power	7	Thick Red	DC Power 12V
	8	Thick Black	DC Power 0V

P3 Table3: CN-4 Colour Coding

Wire Application	Wire	Colour	Description
Tamper Switch	1	Red	Normally Closed
	2	Orange	Common
	3	Yellow	Normally Open

P2 Table2: CN-1 Colour Coding

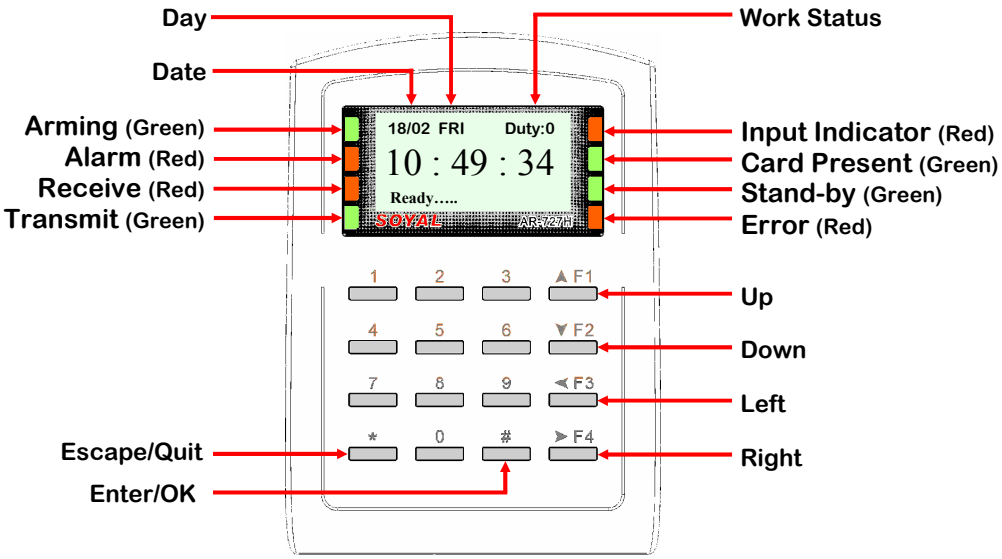
Wire Application	Wire	Colour	Description
Networking	1	Thick Green	RS-485 (B-)
	2	Thick Blue	RS-485 (A+)
Wiegand	3	Thin Blue	Wiegand DAT:1 Input BA Clock Input (W1)
	4	Thin Green	Wiegand DAT:0 Input BA Data Input (W0)
Buzzer	5	Pink	Buzzer Output 5V 100mA, Low
LED	6	Brown	Green LED Output 5V 20mA, Max
	7	Yellow	Red LED Output 5V 20mA, Max

P4 Table4: CN-2 Colour Coding

Wire Application	Wire	Colour	Description
Arming Setting Input	1	Orange/White	on off Latch Type
Serial Port	2	Yellow/White	Serial Output (Transistor Open Collector) (4800,N,8,1)
Arming Status Output	3	Red/White	Arming Output (Active Low)
Card Present	4	Brown/White	Card Present Output Active Low (Transistor Output)

DISPLAY AND KEYPAD LAYOUT

Front Panel Layout



LED's

Arming (Green)	- Indicates Arming function is active.
Alarm (Red)	- Indicates Alarm function is active.
Receive (Red)	- Indicates data received from host.
Transmit (Green)	- Indicates data transmitted to host.
Input Indicator (Red)	- Indicates peripheral device to activate arming status is active.
Card Present (Green)	- Indicates a card is present at the reader.
Stand-by (Green)	- Indicates power on/operating OK.
Error (Red)	- Indicates system error.

Display

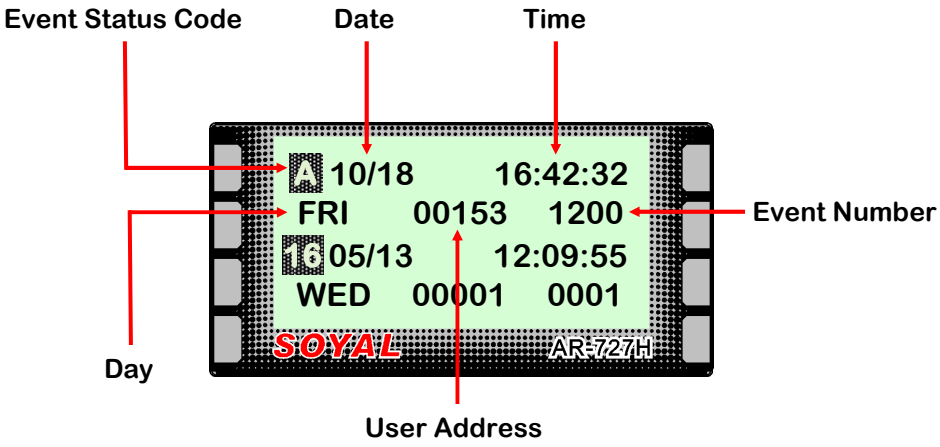
Date	- Shows current date.
Day	- Shows current day of the week.
Work Status	- Shows current Work Status.

Buttons

▲F1	- Navigates up the menu. In Time & Attendance mode, press once for Duty On, press twice for Break Start.
▼F2	- Navigates down the menu. In Time & Attendance mode, press once for Duty Off, press twice for Break End.
◄F3	- Navigates up the menu. In Time & Attendance mode, press once for Overtime On, press twice for Go.
►F4	- Navigates down the menu. In Time & Attendance mode, press once for Overtime Off, press twice for Return.
✱	- Press to escape current menu screen.
#	- Press to enter data.
✱ & #	- Press together to lock/unlock Keypad.

DISPLAY MESSAGES

Events Screen Layout



Event Status Code

A:	Indicates the start of a duty period
B:	Indicates the end of a duty period
C:	Indicates the start of an overtime period
D:	Indicates the end of an overtime period
E:	Indicates the start of a break period
F:	Indicates the end of a break period
G:	Indicates user has left the premises
H:	Indicates the user has returned to the premises
01:	Indicates an erroneous password has been entered
03:	Indicates an unprogrammed or invalid card has been presented
04:	Indicates a time-zone error
11:	Indicates normal access
16:	Indicates egress via exit function
17:	Indicates an alarm state
31:	Indicates an anti-passback error

Event Messages

When viewing events, the screen will always show 2 events at a time.
The controller can store a maximum of 1,200 events.
After the 1,200th event, the controller overwrites the messages from event number 0001 onwards.
Two messages are shown on screen at a time and scrolling up (with F1) or down (with F2) will take you to the next or previous message.
The messages can be deleted from the controller by performing a factory reset.

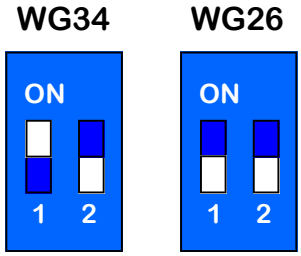
NOTICE

If a Factory Reset is performed to erase the event messages, all other programming will be lost. Before attempting a Factory Reset make a record of all necessary programming.

READER WIEGAND SETTINGS

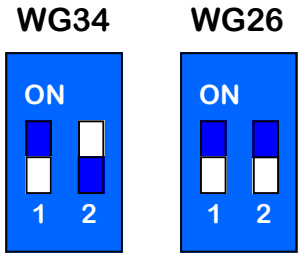
AR-737HB-RAY Reader DIP Switch Settings

SW1	SW2	OUTPUT
ON	OFF	WG34
OFF	OFF	WG26



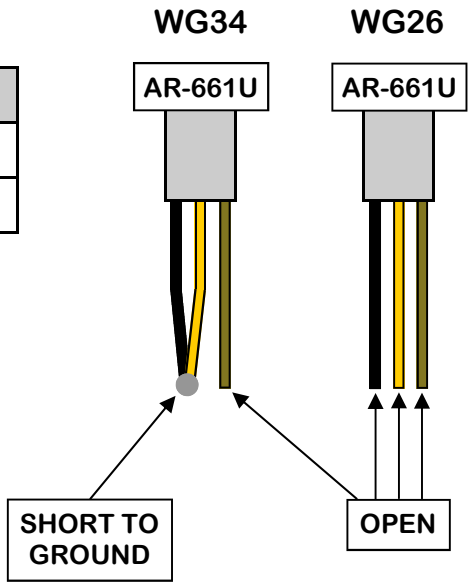
AR-721U Reader DIP Switch Settings

SW1	SW2	OUTPUT
OFF	ON	WG34
OFF	OFF	WG26



AR-661U Reader Wiring

YELLOW	BROWN	OUTPUT
SHORT TO GND	OPEN	WG34
OPEN	OPEN	WG26



NOTICE

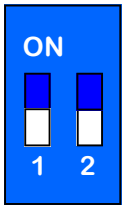
WG Mode will only change after powering off and on again.

READER WIEGAND SETTINGS CONTINUED

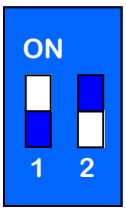
AR-737U Reader DIP Switch Settings

SW1	SW2	OUTPUT
OFF	OFF	WG34
ON	OFF	WG26

WG34



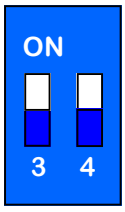
WG26



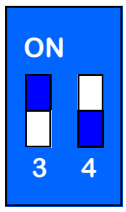
AR-737U Reader Indication DIP Switch Settings

SW3	SW4	INDICATION
ON	ON	Red LED On
OFF	ON	Green LED On
ON	OFF	Red LED & Buzzer On
OFF	OFF	No Indication

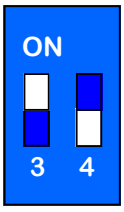
RED LED ON



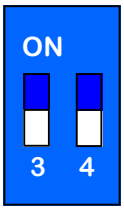
GREEN LED ON



RED LED & BUZZER ON



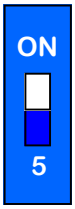
NO INDICATION



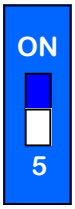
AR-737U Reader Token DIP Switch Settings

SW5	TOKENS
ON	Soyal
OFF	Standard

Soyal



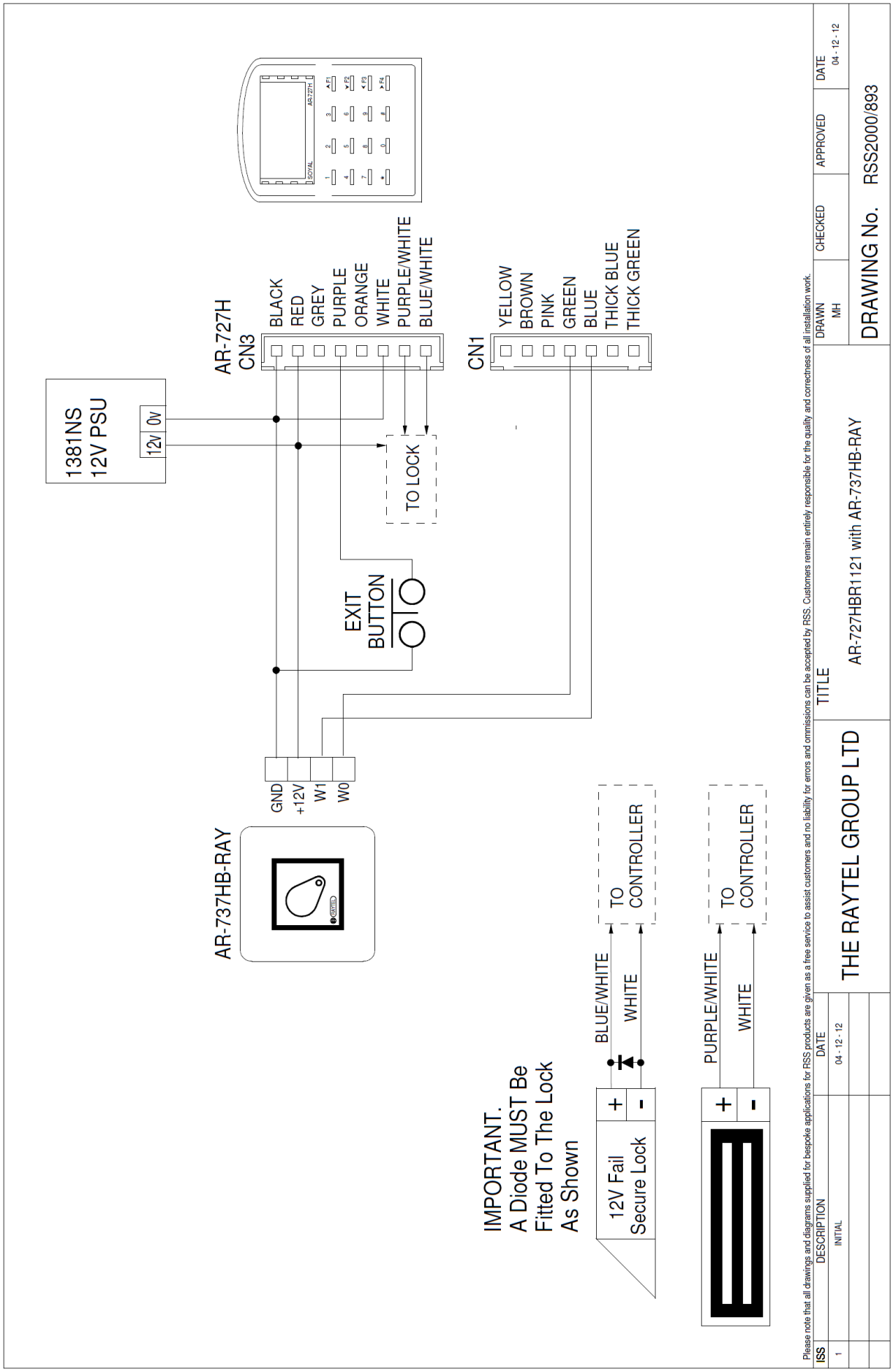
Standard



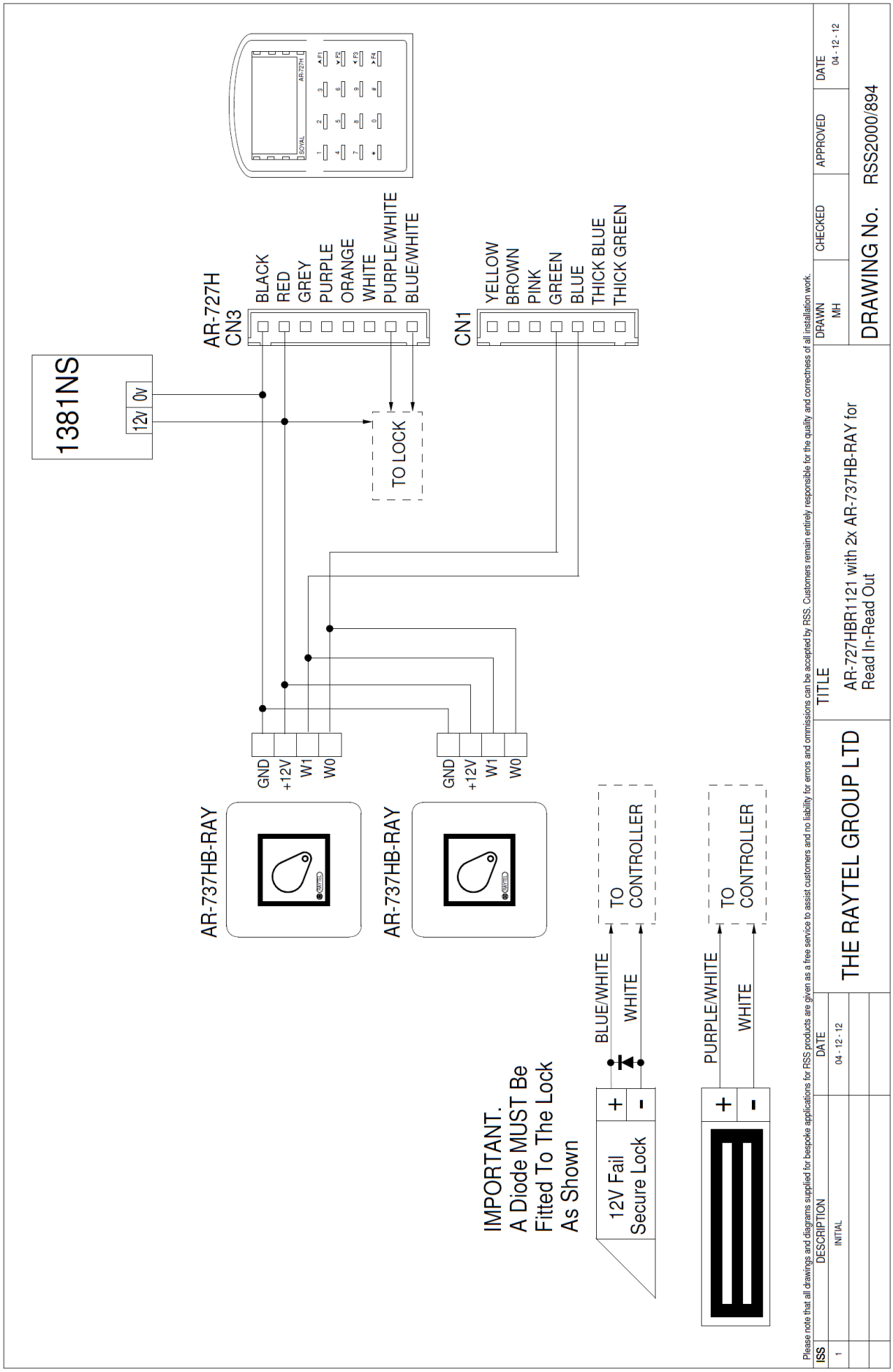
NOTICE

WG Mode will only change after powering off and on again.

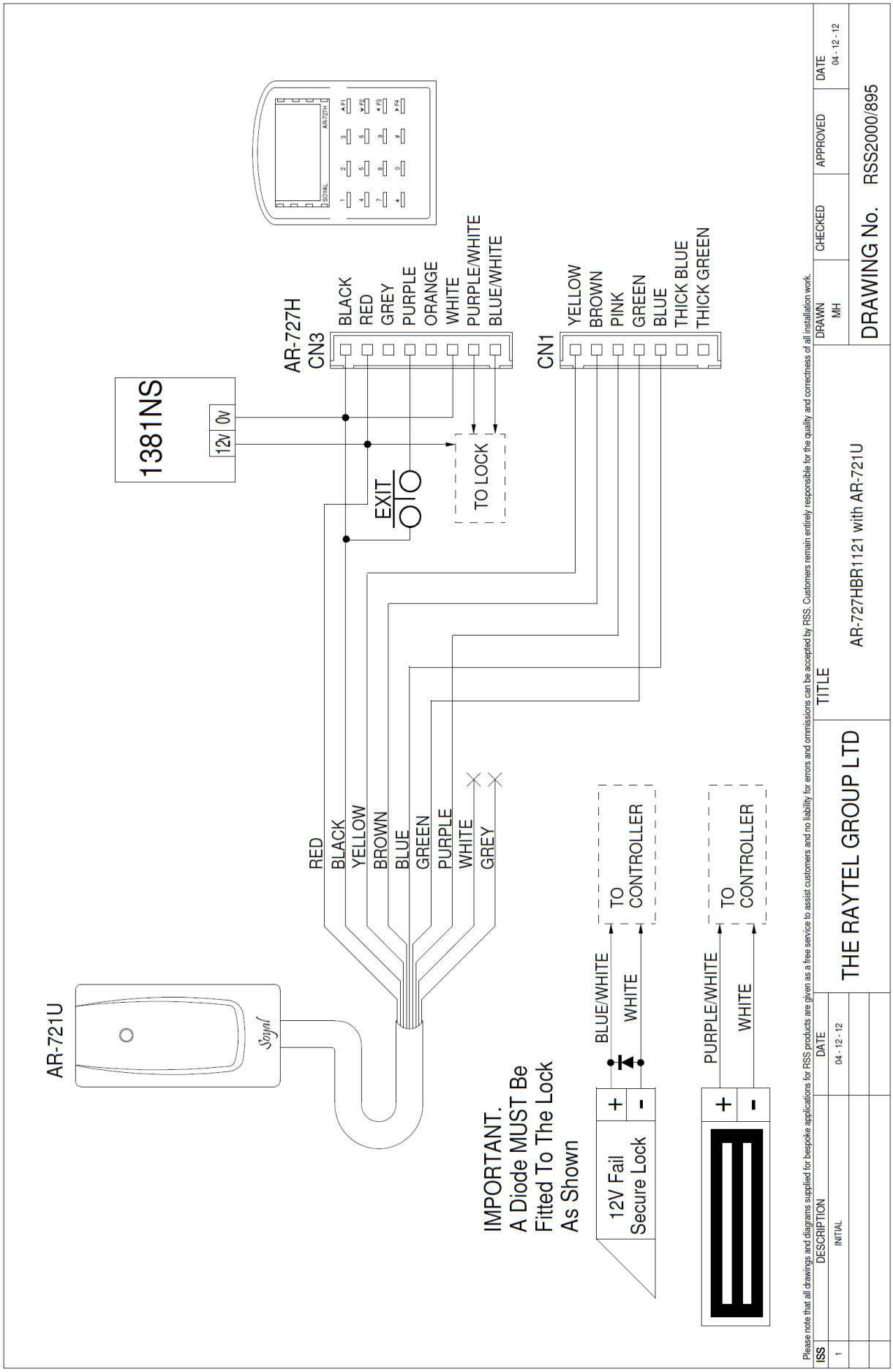
AR-727HBR1121 WITH AR-737HB-RAY



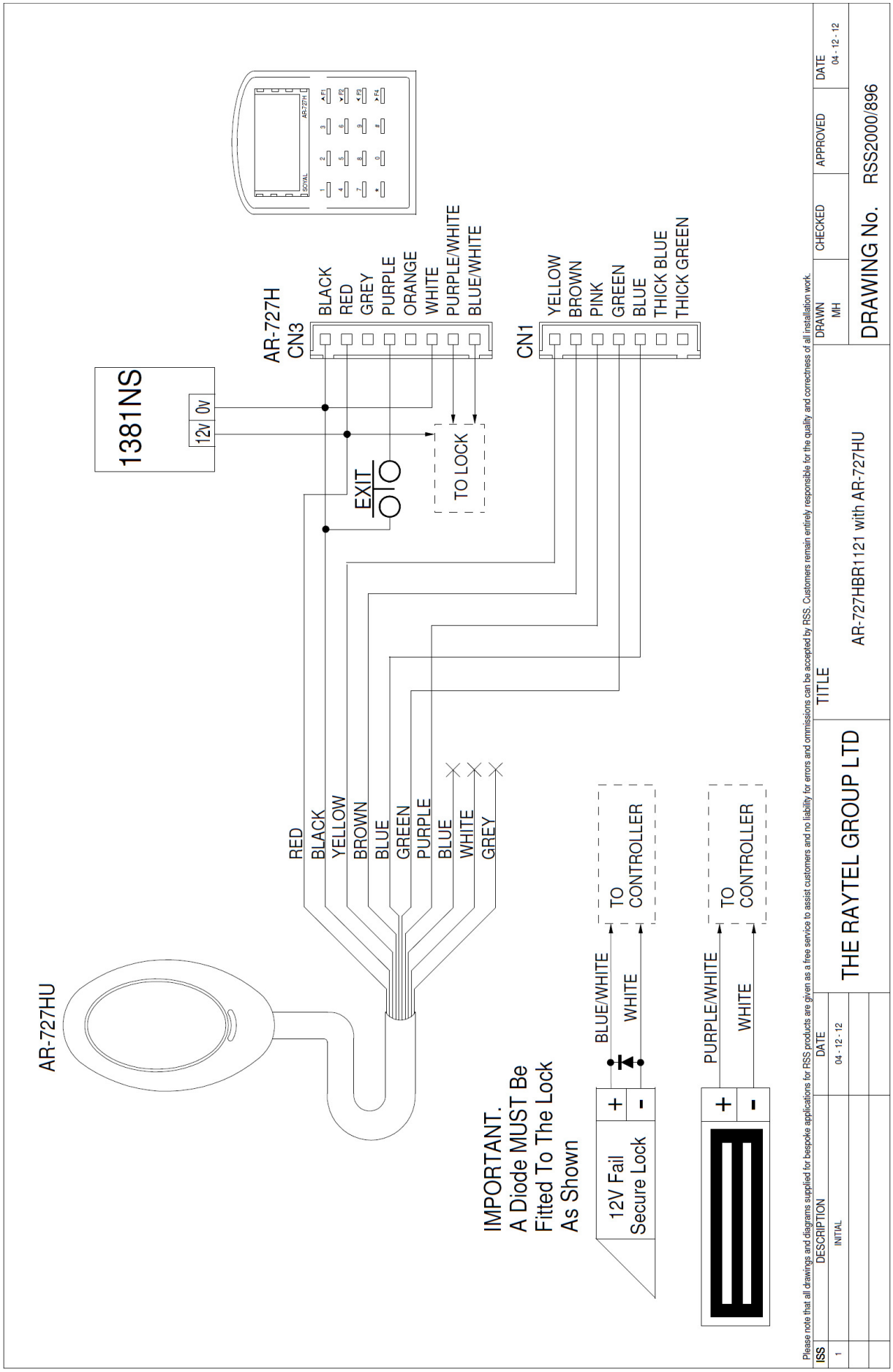
AR-727HBR1121 WITH 2X AR-737HB-RAY FOR READ IN-READ OUT



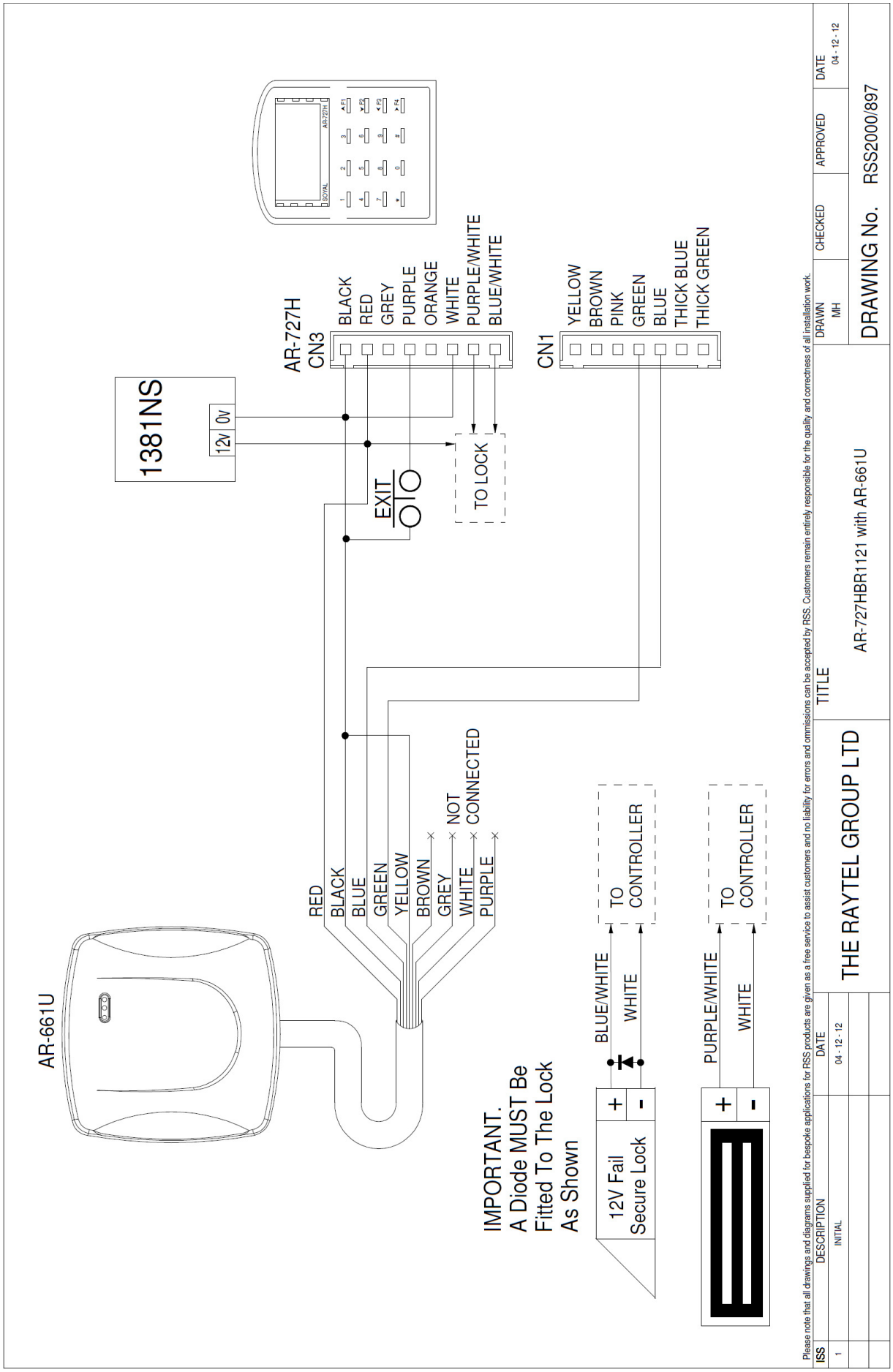
AR-727HBR1121 WITH AR-721U



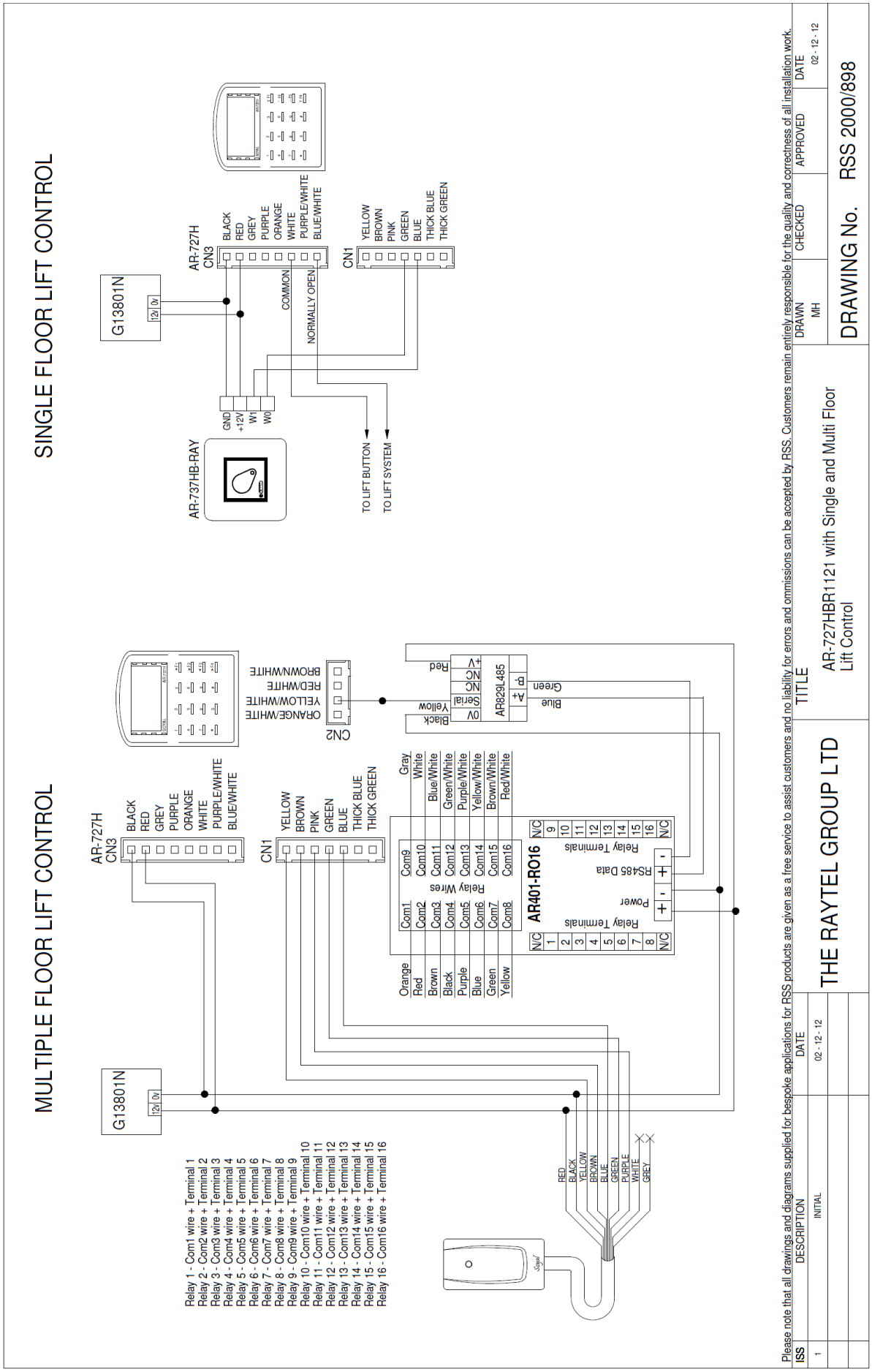
AR-727HBR1121 WITH AR-727HU



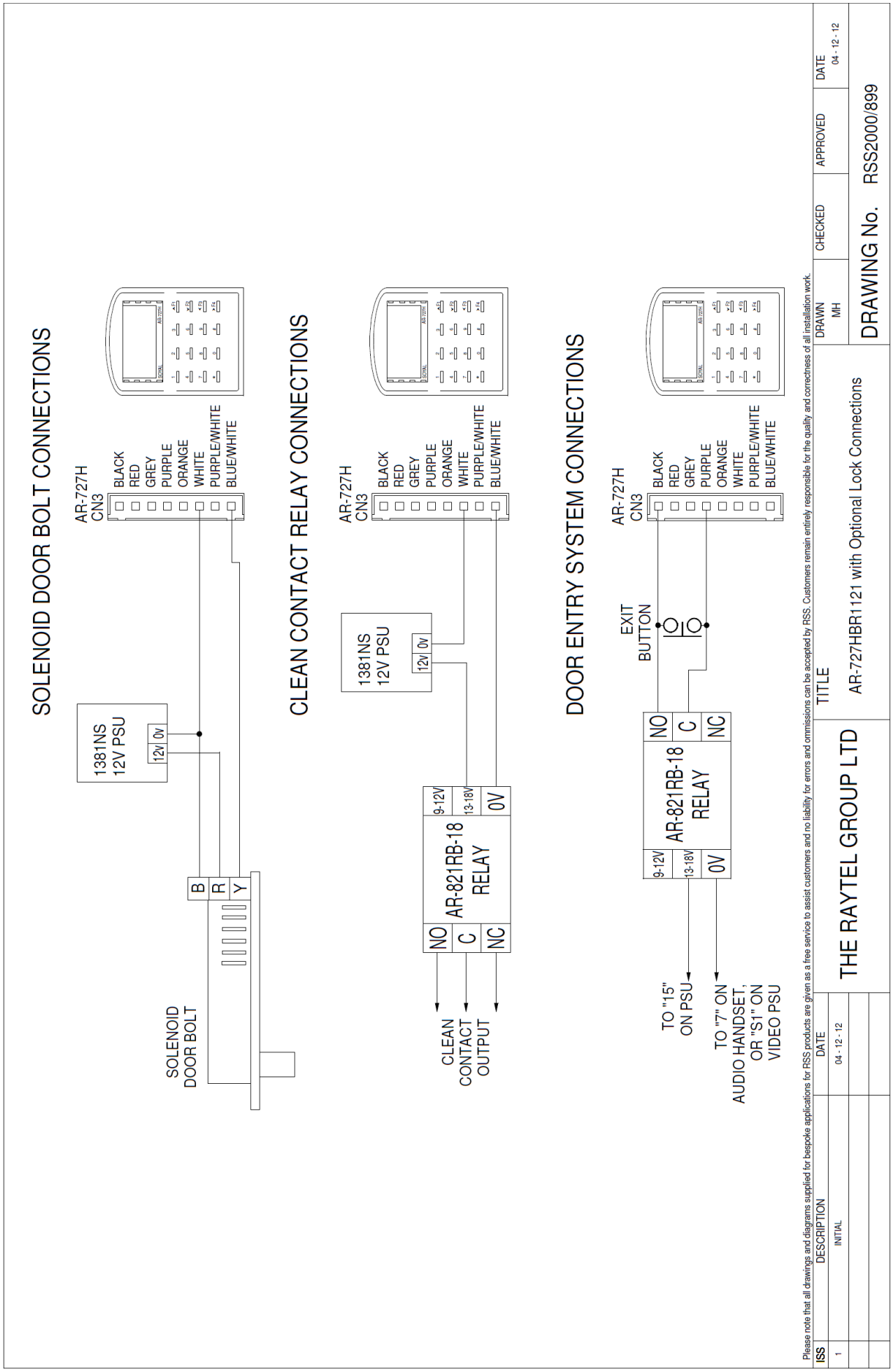
AR-727HBR1121 WITH AR-661U



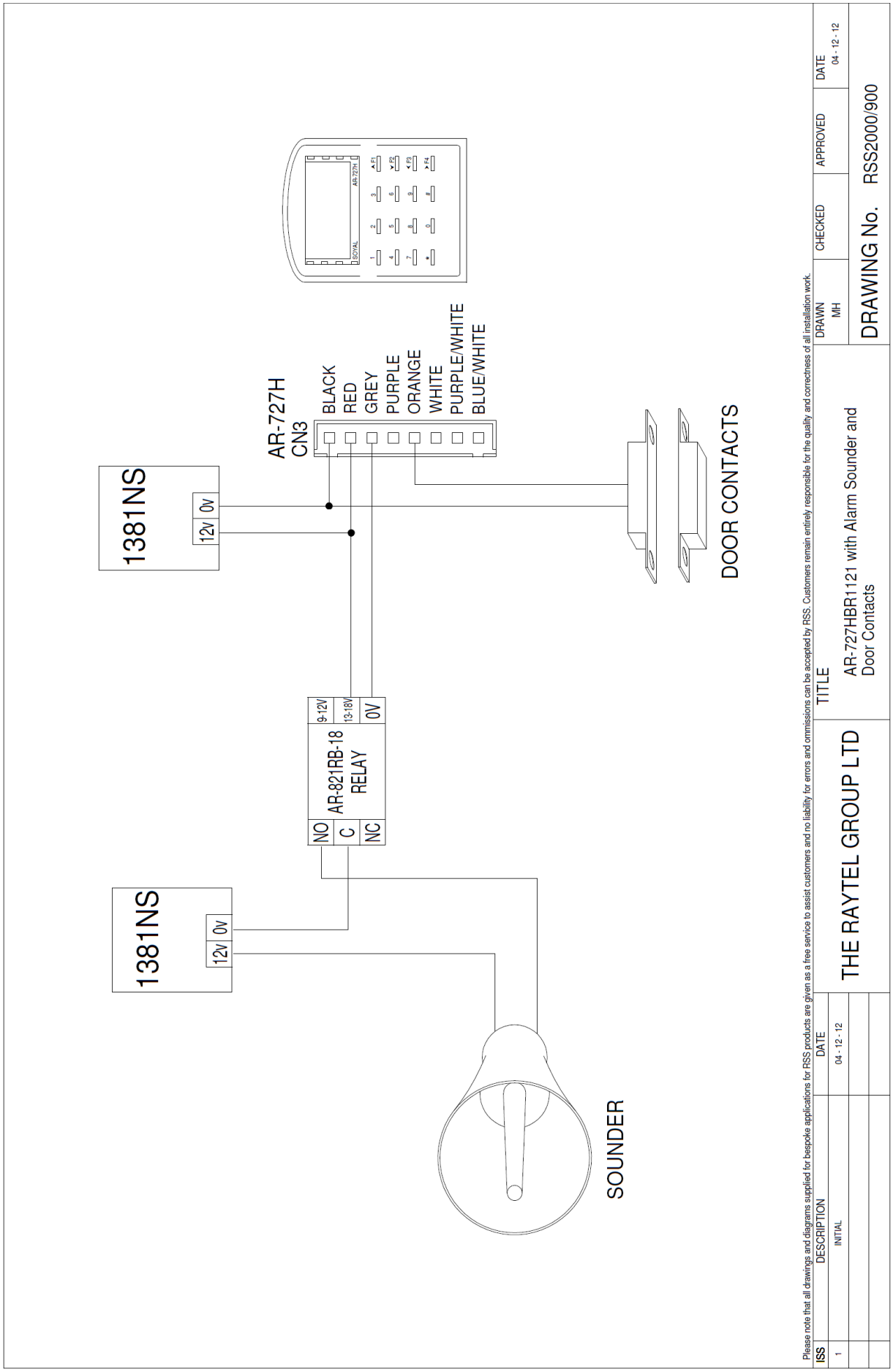
AR-727HBR1121 WITH SINGLE AND MULTI FLOOR LIFT CONTROL



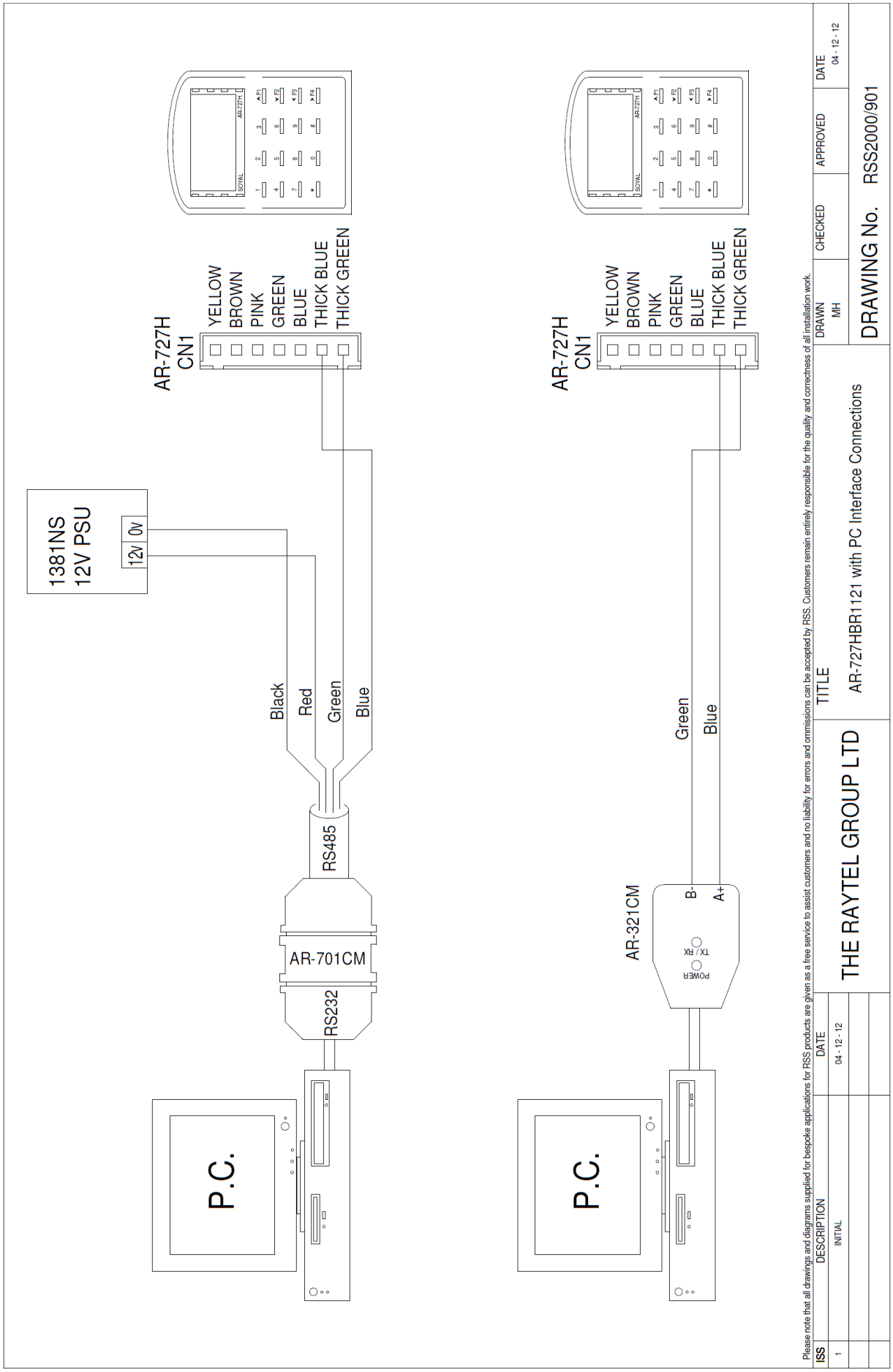
AR-727HBR1121 WITH OPTIONAL LOCK CONNECTIONS



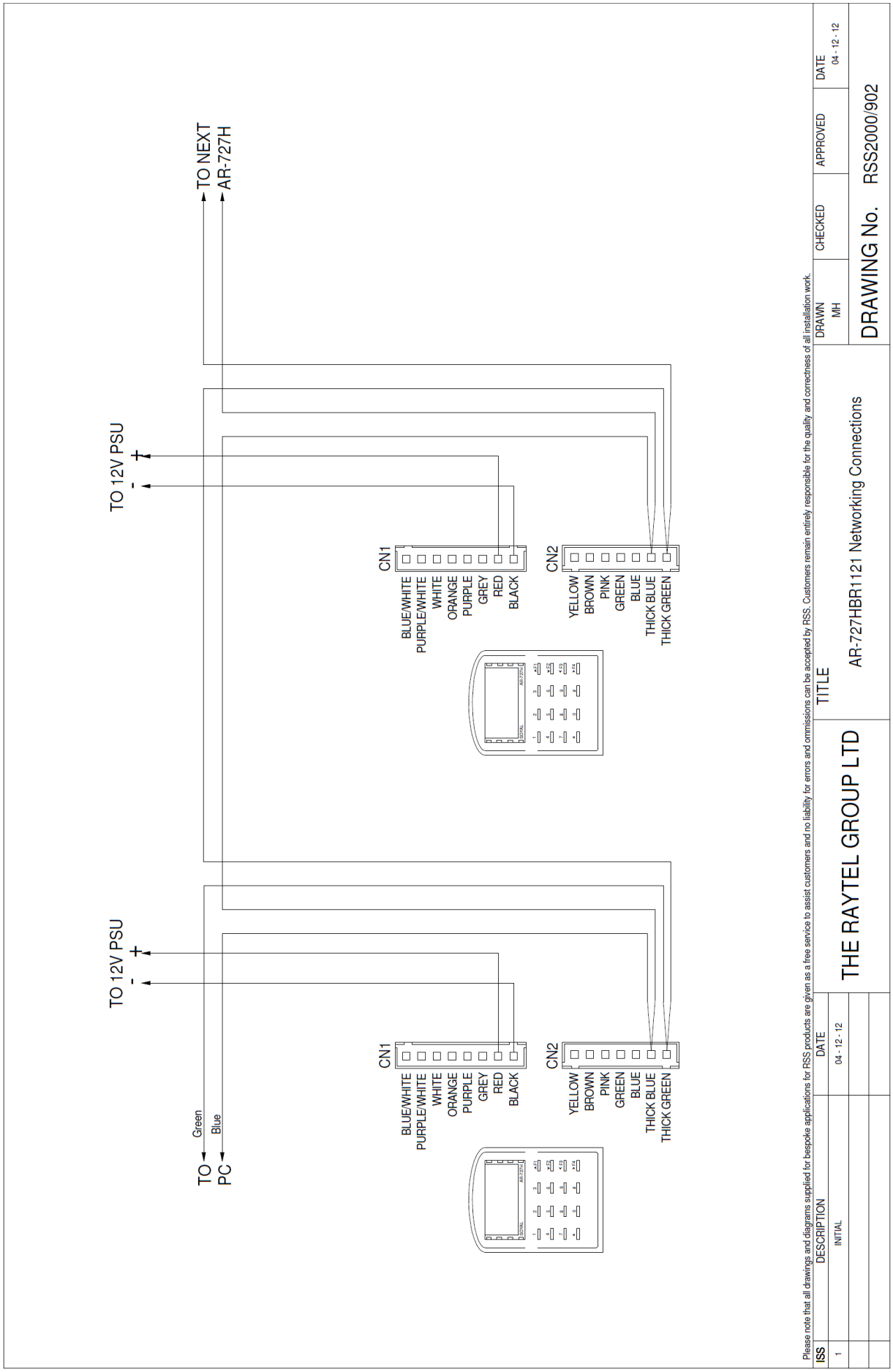
AR-727HBR1121 WITH ALARM SOUNDER AND DOOR CONTACTS



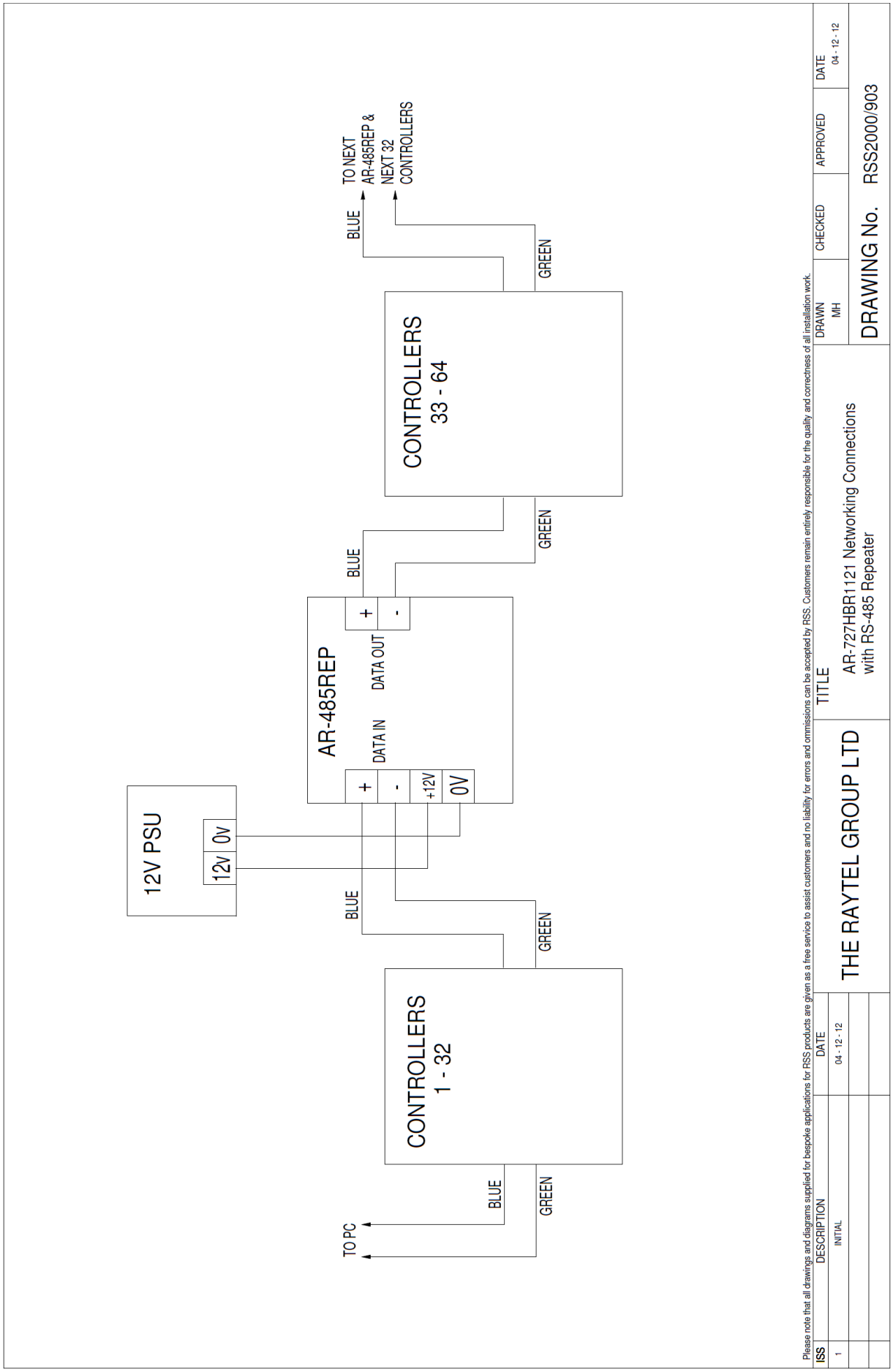
AR-727HBR1121 WITH PC INTERFACE CONNECTIONS



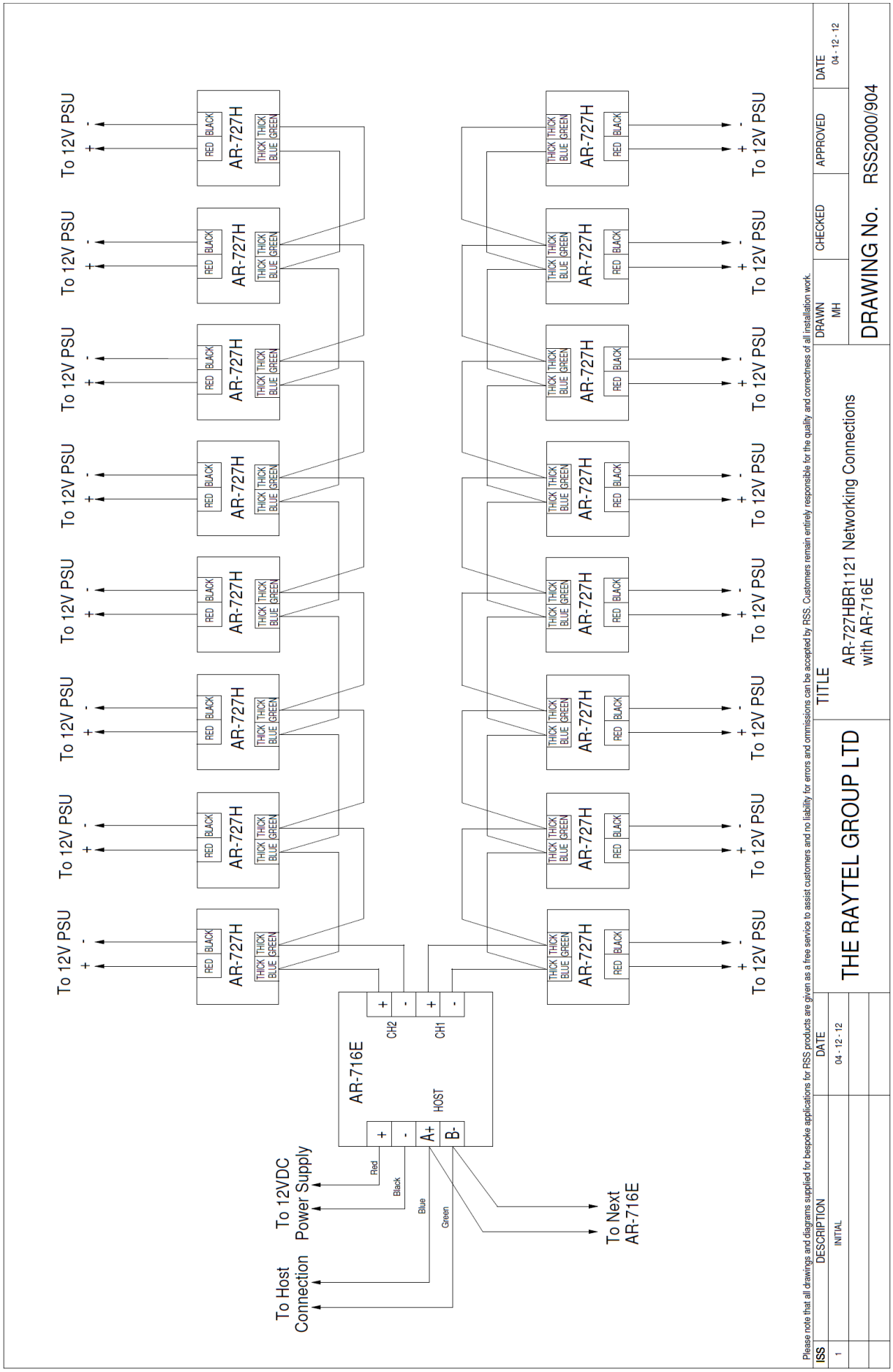
AR-727HBR1121 NETWORKING CONNECTIONS



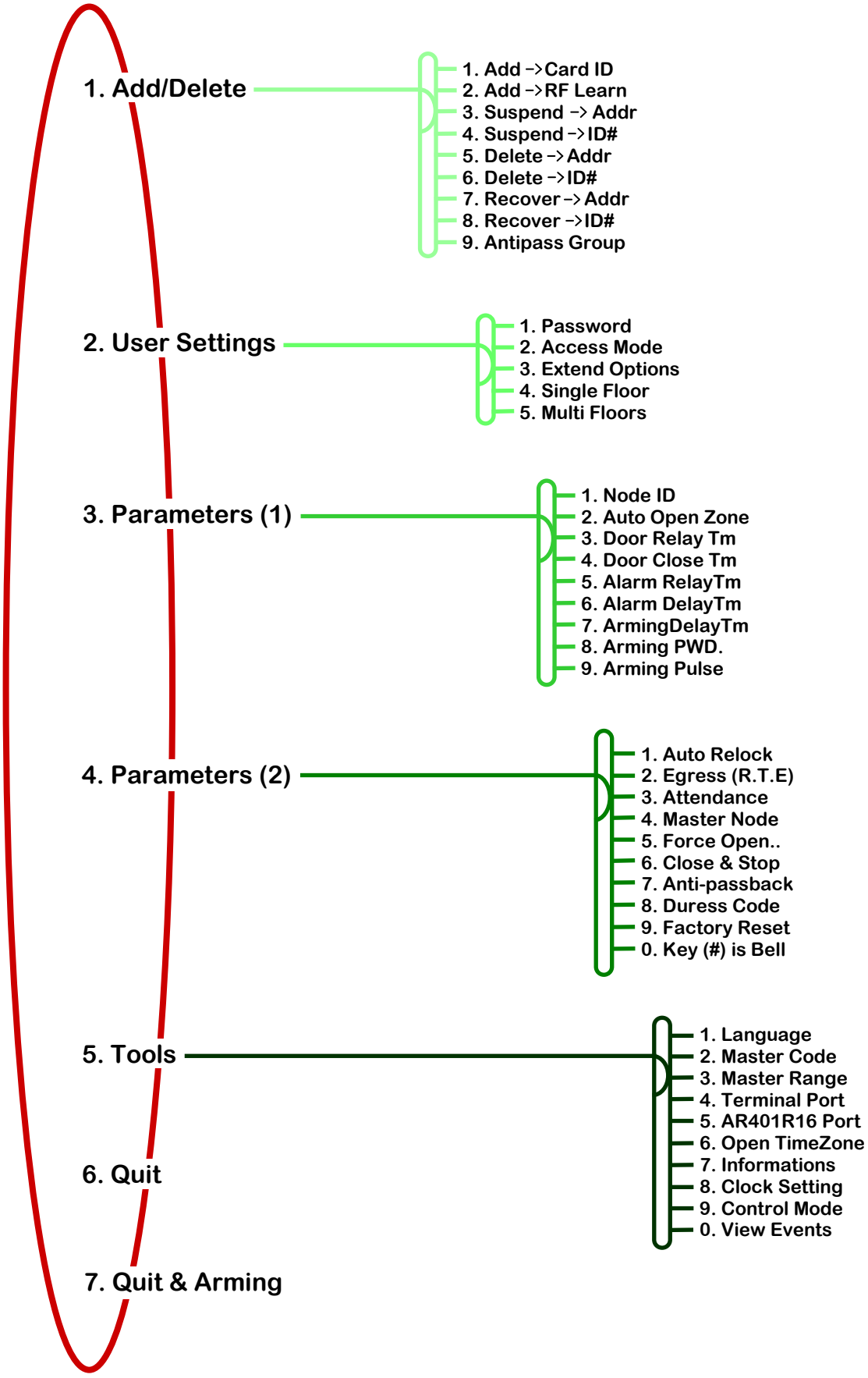
AR-727HBR1121 NETWORKING CONNECTIONS WITH RS-485 REPEATER



AR-727HBR1121 NETWORKING CONNECTIONS WITH AR-716E



PROGRAMMING MENU TREE



INITIAL PROGRAMMING

Initial Setup

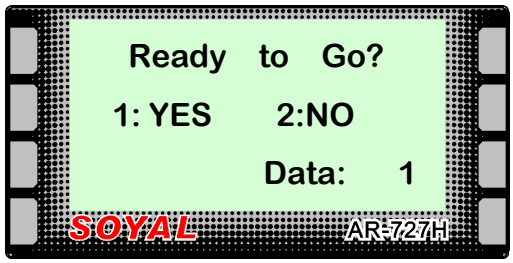
1. Restoring Factory Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 4.PARAMETERS (2) and press #

Use F1 or F2 to scroll to 9.FACTORY RESET and press #

The display will now show:-



Press 1 or #

The display will briefly show INITIAL SYSTEM...

The factory default settings have now been restored.

2. Changing The Master Code

Enter Programming Mode *123456# or *MASTER CODE#

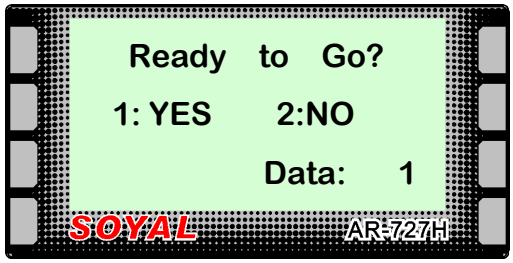
Use F1 or F2 to scroll to 5.TOOLS and press #

Use F1 or F2 to scroll to 2.MASTER CODE and press #

The display will show INPUT 6 DIGIT NO 000001~999999

ENTER THE NEW 6 DIGIT MASTER CODE.

The display will now show:-



Press 1 or #

The display will show SUCCEEDED!

The Master Code should now be the 6 digit code that was just entered.

NOTICE

It is important that a record of the new Master Code is kept somewhere safe in case any further programming is required. Once changed, if the Master Code is lost, the only way to reset the Master Code is by connecting the unit to a PC or Laptop and using ISP Tools software.

CONTROL MODE

Changing Control Mode

AR-727H	MODE 4	MODE 6	MODE 8	NETWORKING
User Card Capacity	1,024	65,536	1,024	Depends on Controller §
Access Mode	Card Only Card and PIN User No and PIN	Card Only	Card Only Card and PIN PIN only	Card Only Card and PIN User No and PIN PIN only
Anti-Pass Back	Single Door	N/A	Single Door	Up To 16 Doors
Code Capacity	1,024	1	1,024	Depends on Controller †
Event Capacity	1,200	N/A	1,200	Depends on Controller ‡
Duress	4 Digit Code	N/A	4 Digit Code	Up To 4x 4 Digit
Time Zone	N/A	N/A	N/A	11 Time Zones
Control Mode in Networking	Mode 4	N/A	Mode 8	Mode 4 or Mode 8
Wiegand Output	WG32	WG16	WG32	WG32
Lift Control	32 Floors 1,024 Card Users	N/A	32 Floors 1,024 Card Users	32 Floors 1,024 Card Users

§ If using an AR-716E, User Card Capacity can be up to 15,000 Users.
† If using an AR-716E, Code Capacity can be up to 15,000 codes.
‡ If using an AR-716E, Event Capacity can be up to 11,000 events.

Control Modes

Mode 4 is for Stand-Alone and Networking directly to a PC or under a 716E. This is similar to Mode 8 with the only difference being in Access Mode.

Mode 6 is for Stand-Alone applications only.

Mode 8 is for Stand-Alone and Networking directly to a PC or under a 716E. This is similar to Mode 4 with the only difference being in Access Mode.

Networking is for Modes 4 and 8 and is specifically for networking either directly to a PC or under a 716E.

NOTICE

When changing Control Mode from Mode 6 to Mode 4 and vice versa, it is necessary to delete all User Card Data first.

CONTROL MODE

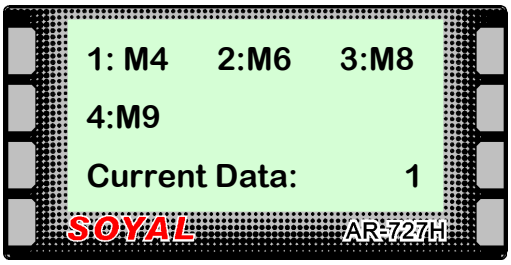
Changing Control Mode Continued

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 5. Tools and press #

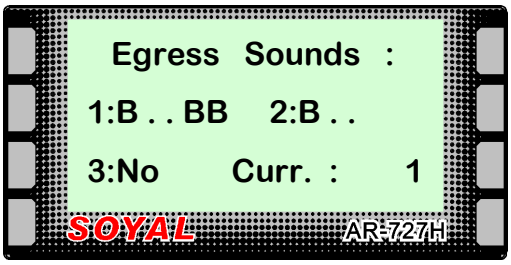
Use F1 or F2 to scroll to 9. Control Mode and press #

The Display will show:-



Enter number for required Control Mode.

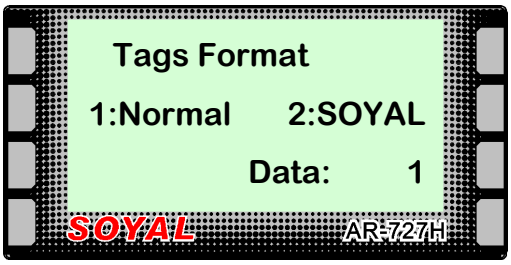
The Display will show:-



Enter number for required Egress Tone.

Parameter	Function
1:B..BB	Triple Beep
2:B..	Single Beep
3:No	No Beep

The Display will show:-



Enter Number for required Tag Format.

The Display will now show Succeeded !

NOTICE

When changing Control Mode from Mode 6 to Mode 4 and vice versa, it is necessary to delete all User Card Data first.

SYSTEM INFORMATION & CLOCK SETTINGS

Viewing Information

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 5. Tools and press #

Use F1 or F2 to scroll to 7. Informations and press #

The Display will show:-

AR7x7V3 7V3. 125K = The version of Firmware and Frequency.
Users: 00025 = The quantity of tokens programmed.
Messages: 00456 = The quantity of stored messages.

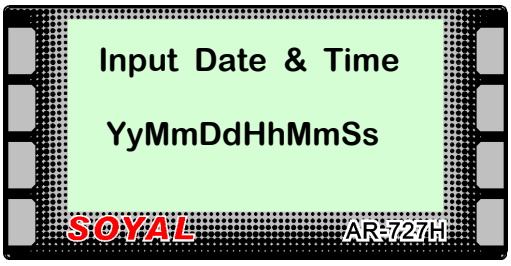
Setting Clock

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 5. Tools and press #

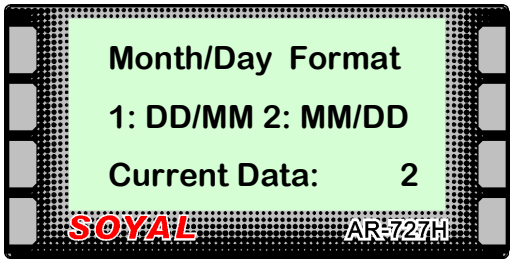
Use F1 or F2 to scroll to 8. Clock Setting and press #

The Display will show:-



Enter the time and date

The Display will show:-



Enter the required number for month/day format and press #

The Display will now show Succeeded !

LOCK TIME AND LATCH MODE

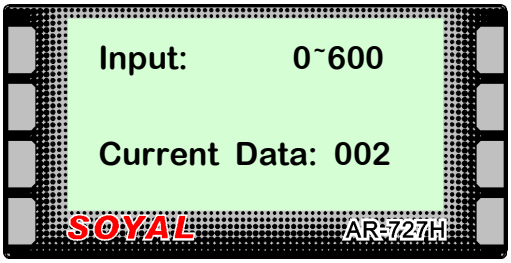
Setting Lock Time

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 3. Door Relay Tm and press #

The Display will show:-



Enter the time required in seconds and then press #

E.g. Entering 010 will give a lock open time of 10 seconds.

The Display will now show Succeeded !

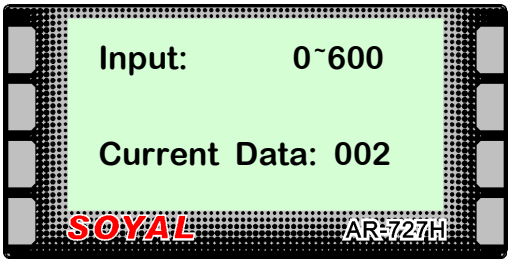
Setting Latch Mode

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 3. Door Relay Tm and press #

The Display will show:-



Enter 0 and # press

The Display will now show Succeeded !

NOTICE

When Latch Mode has been set, the lock relay will switch and the door will latch open after a valid programmed token has been presented.
The door will then stay open until a valid programmed token is presented and then the relay will switch back and the door will lock.

EXIT FUNCTION

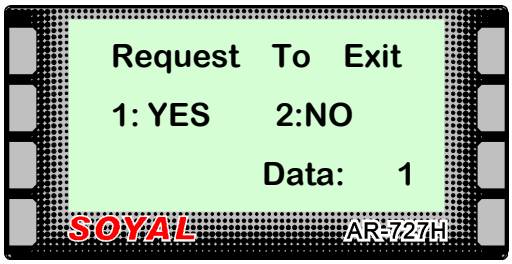
Setting Exit Button Function

Enter Programming Mode `*123456#` or `*MASTER CODE#`

Use F1 or F2 to scroll to `4. Parameters (2)` and press `#`

Use F1 or F2 to scroll to `2. Egress (R.T.E)` and press `#`

The Display will show:-



Enter number required.

Entering `1` will enable Exit function, entering `2` will disable Exit Function.

The Display will now show `Succeeded !`

NODE ID SETTINGS

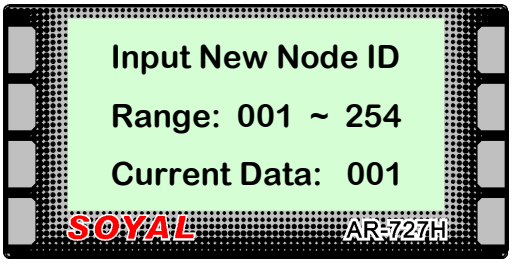
Setting Node ID for Networked Controllers

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

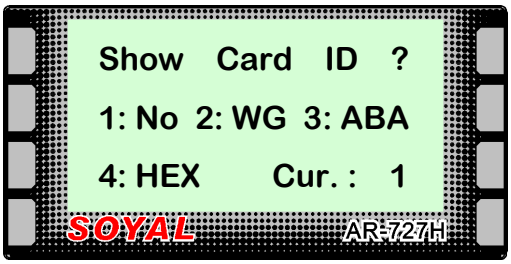
Use F1 or F2 to scroll to 1. Node ID and press #

The Display will show:-



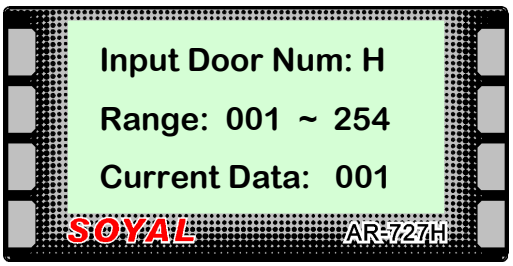
Enter the required Node ID number and press #

The Display will now show:-



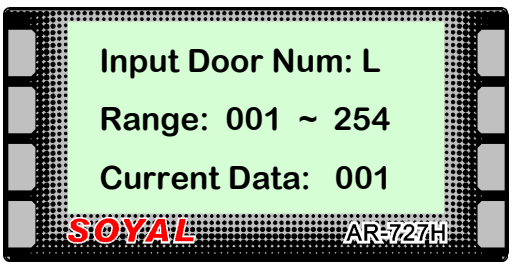
Enter Number required.

The Display will show:-



Input the Door Number and press #
This is the Hardware number of the Controller, each Controller must have a different number.
This is usually the same as Door Num: L below.

The Display will show:-



Input the Door Number and press #
This is the Door number. For all the doors to show different numbers in the software, this must be different for each door.
This is usually the same as Door Num: H above.

The Display will show Succeeded!

PROGRAMMING TOKENS

Checking Available Memory Locations

Memory locations can be overwritten on controllers with Firmware version 7V4 and earlier (on later versions of firmware, existing tokens cannot be overwritten but it is still necessary to keep a record of token addresses in the memory), therefore it is advisable to check which firmware version is installed on the controller as follows:-

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 5. Tools and press #

Use F1 or F2 to scroll to 7. Informations and press #

The Display will show:-

AR7x7V3 = Controller type.
7V3. = Firmware Version.
125K = The Controllers Frequency.

In an existing installation, before programming tokens, it is advisable to check the amount of free memory locations to avoid overwriting any previously programmed tokens.

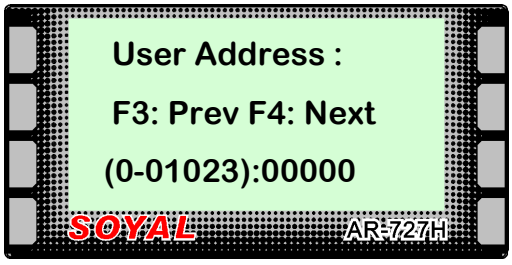
View the remaining memory locations as follows:-

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

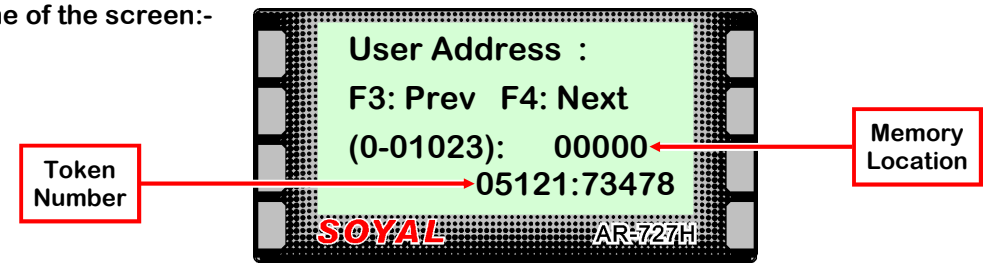
Use F1 or F2 to scroll to 1. Add ->Card ID and press #

The Display will show:-



Use F1 to scroll backwards through the Memory Locations, use F2 to scroll forwards through the Memory Locations until a suitable number of empty slots is found.

When a Memory Location contains a programmed token, the token number is shown on the bottom line of the screen:-



ADD/DELETE

WARNING

Before Proceeding with any token programming, please read the following.

The last page of this manual is a token/memory slot record sheet. The blank sheet should be photocopied and the photocopy kept up-to-date with the location and number of each token added or deleted.

Failure to do so might result in valid tokens being overwritten when batches of tokens are added en bloc, if deletion of individual tokens have left vacant memory slots scattered amongst valid tokens.

If the first token in a new batch is directed to a single vacant memory slot, then the rest of the batch will overwrite (and replace) any subsequent valid tokens in the memory.

For this reason, it is advisable to read the section "Checking Available Memory Locations" (page 38 opposite) before adding tokens since the F3 and F4 functions can be used to identify the location and quantity of vacant memory slots even if the Token Record Sheet has not been kept up-to-date.

This applies to all firmware versions up to and including 7V4. Version 7V5 automatically avoids overwriting valid tokens.

A record should still be kept of token location in the memory, however, to facilitate deletion of specific tokens.

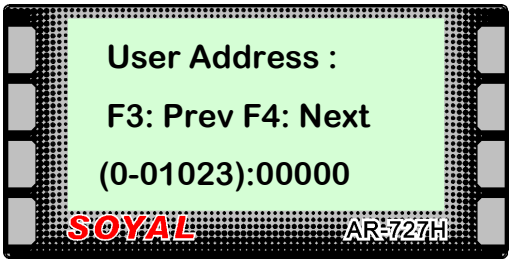
Add Card ID

Enter Programming Mode `*123456#` or `*MASTER CODE#`

Use F1 or F2 to scroll to `1. Add/Delete` and press `#`

Use F1 or F2 to scroll to `1. Add ->Card ID` and press `#`

The Display will show:-



Enter the User Address, for this example `00000` and press `#`

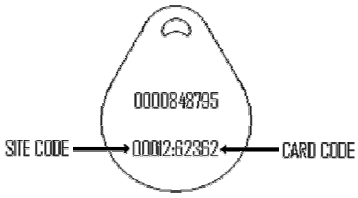
(User Address is the memory slot into which the token will be entered)

Continued Over

Add Card ID continued.

The Display will now show:-

Enter the FIRST five digit number on the bottom line of the token



Using this token as an example, type in 00012

The Display will now show:-

Enter the SECOND five digit number on the bottom line of the token
Using the above example, type in 62362

The Display will briefly show:-

Scan Data: XXXX will quickly scroll through 00001 to 65535

The Display will now show:-

The Token has been programmed successfully.

ADD/DELETE

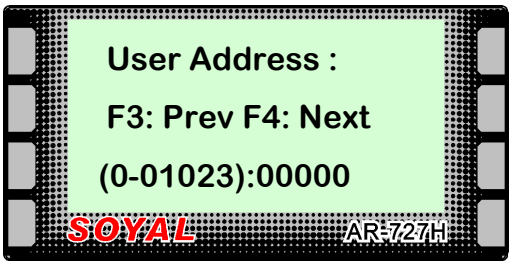
Add RF-Learn To Enter Sequential Tokens

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 2. Add->RF-Learn and press #

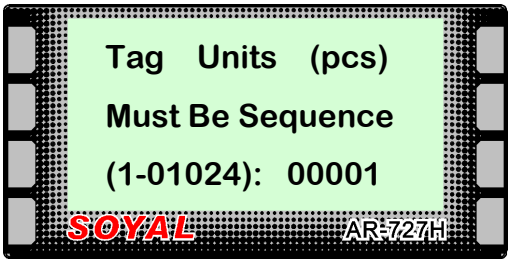
The Display will show:-



Enter the User Address, for this example 00001 and press #

(User Address is the memory slot into which the first token of the batch will be entered)

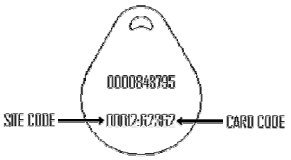
The Display will now show:-



Enter the quantity of tokens to be programmed, for this example 10 and press #

The Display will now show:-

Present the token with the lowest Card Code number to the bottom of the controller.



The Display will now show:-

All Tokens have been successfully programmed.

ADD/DELETE

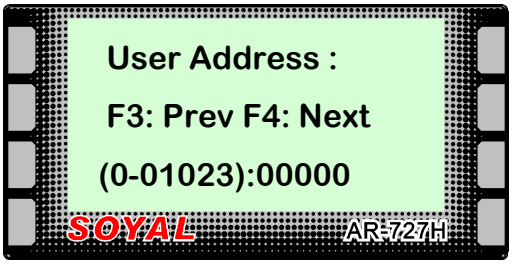
Add RF-Learn To Enter Non Sequential Tokens

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 2. Add->RF-Learn and press #

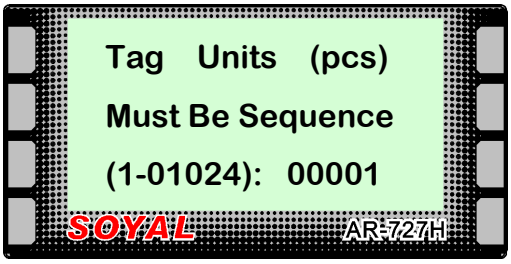
The Display will show:-



Enter the User Address, for this example 00001 and press #

(User Address is the memory slot into which the first token of the batch will be entered)

The Display will now show:-



Press 1 and # together.

The Display will now show:-

Present the first token to the bottom of the controller.

The Display will now show:-

Present the rest of the tokens one at a time, and when finished press * until the display shows 6. Quit and then press #

ADD/DELETE

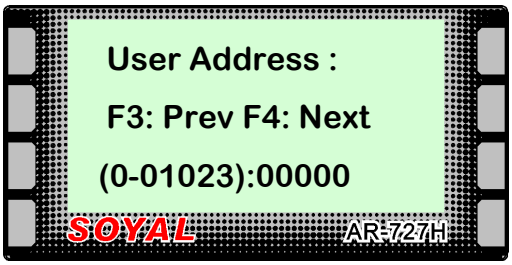
Add RF-Learn To Enter A Single Token

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 2. Add->RF-Learn and press #

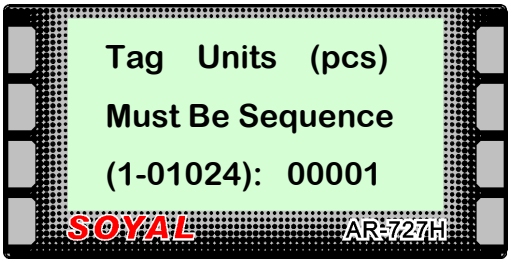
The Display will show:-



Enter the User Address, for this example 00001 and press #

(User Address is the memory slot into which the first token of the batch will be entered)

The Display will now show:-



Enter the quantity of tokens to be programmed, for this example 1 and press #

The Display will now show:-

Present the token to the bottom of the controller.

The Display will now show:-

The Token has been programmed successfully.

ACCESS MODE

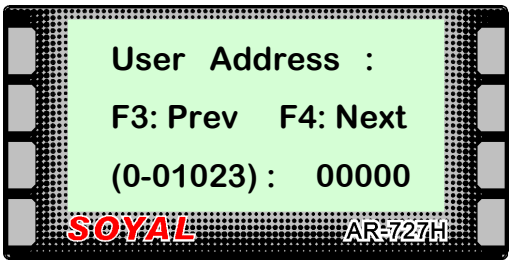
Setting Access Mode For Tokens

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 2. User Settings and press #

Use F1 or F2 to scroll to 2. Access Mode and press #

The Display will show:-



Enter the user address and press #

The Display will now show:-

Enter Number required.

Parameter	Function
1: Card	Token only
2: or PIN	Token or PIN number
3: & PIN	Token and PIN number
4: Pause	Suspend token

The Display will show Succeeded!

NOTICE

When Networking, the above programming is not required. Please refer to the 701 Client Software manual for Access Mode settings in networking mode.

ADD/DELETE

Suspend Address

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 3. Suspend->Addr and press #

The Display will show:-

Enter the User Address, for this example 00001 and press #

The Display will now show:-

Enter the User Address, for this example 00001 and press #

The Display will now show Succeeded!

To suspend multiple addresses input the start address and press #, then input the end Address and press#.

E.g. To suspend 25 addresses starting with address 00012:-

Enter 00012 and press #

The Display will now show:-

Enter 00036 and press #

The Display will now show Succeeded!

ADD/DELETE

Recover Address

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 7. Recover ->Addr and press #

The Display will show:-

Enter the User Address, for this example 00001 and press #

The Display will now show:-

Enter the User Address, for this example 00001 and press #

The Display will now show Succeeded!

To recover multiple addresses input the start address and press #, then input the end Address and press#.

E.g. To recover 25 addresses starting with address 00012:-

Enter 00012 and press #

The Display will now show:-

Enter 00036 and press #

The Display will now show Succeeded!

ADD/DELETE

Delete Address

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 5. Delete->Addr and press #

The Display will show:-

Enter the User Address, for this example 00001 and press #

The Display will now show:-

Enter the User Address, for this example 00001 and press #

The Display will now show Succeeded!

To delete multiple addresses input the start address and press #, then input the end Address and press#.

E.g. To delete 25 addresses starting with address 00012:-

Enter 00012 and press #

The Display will now show:-

Enter 00036 and press #

The Display will now show Succeeded!

ADD/DELETE

Suspend ID

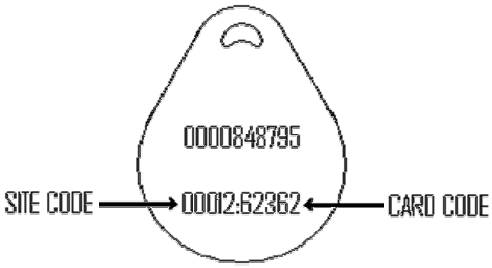
Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 4. Suspend->ID and press #

The Display will show:-

Enter the FIRST five digit number on the bottom line of the token



Using this token as an example, type in 00012 and press #

The Display will now show:-

Enter the SECOND five digit number on the bottom line of the token

Using the above example, type in 62362

The Display will now show Succeeded!

ADD/DELETE

Recover ID

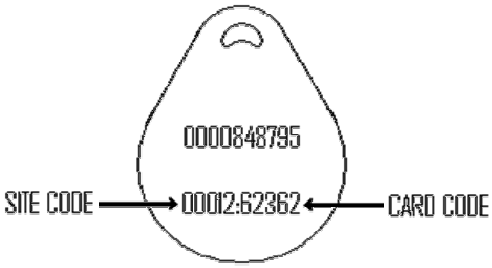
Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 8. Recover ->ID and press #

The Display will show:-

Enter the FIRST five digit number on the bottom line of the token



Using this token as an example, type in 00012 and press #

The Display will now show:-

Enter the SECOND five digit number on the bottom line of the token

Using the above example, type in 62362

The Display will now show Succeeded!

ADD/DELETE

Delete ID

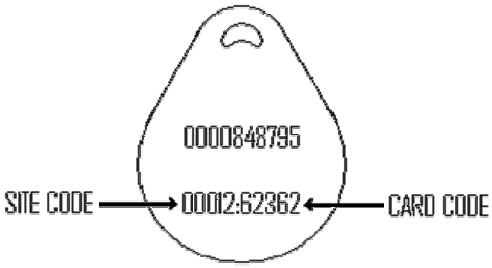
Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

Use F1 or F2 to scroll to 6. Delete->ID and press #

The Display will show:-

Enter the FIRST five digit number on the bottom line of the token



Using this token as an example, type in 00012 and press #

The Display will now show:-

Enter the SECOND five digit number on the bottom line of the token

Using the above example, type in 62362

The Display will now show Succeeded!

ANTI-PASSBACK

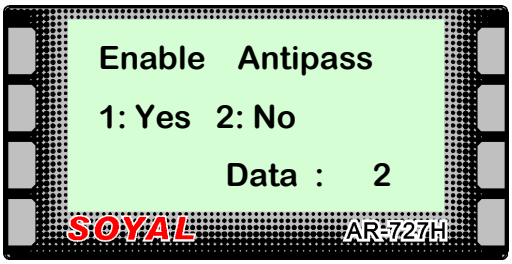
Setting Anti-passback

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 4. Parameters (2) and press #

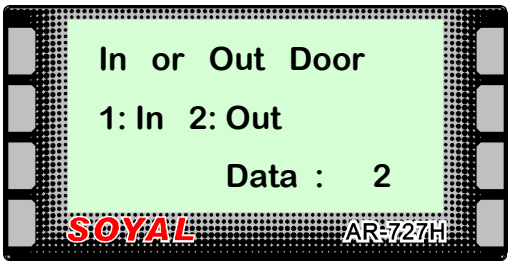
Use F1 or F2 to scroll to 7. Anti-passback and press #

The Display will show:-



Enter the number required.

The Display will now show:-



Enter Number required.

This function stops tokens being passed back to people who have either lost or forgotten theirs or are unauthorised to enter the premises, without the token passing out through the proper exit procedure.

The Display will show Succeeded!

NOTICE

This only enables Anti-passback. Refer to the next two pages for full programming.

ACCESS MODE

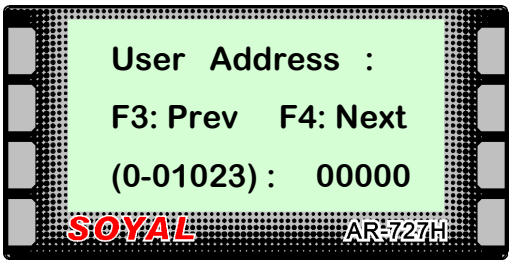
Setting Anti-passback For Individual Addresses

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 2. User Settings and press #

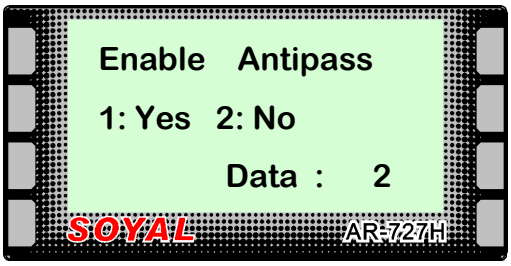
Use F1 or F2 to scroll to 3. Extend Options and press #

The Display will show:-



Enter the user address and press #

The Display will now show:-



Enter Number required.

The Display will show Succeeded!

NOTICE

For Anti-passback to function properly it needs to be enabled following the programming on the previous page of this manual.

User Address = Memory Slot

ANTI-PASSBACK GROUP

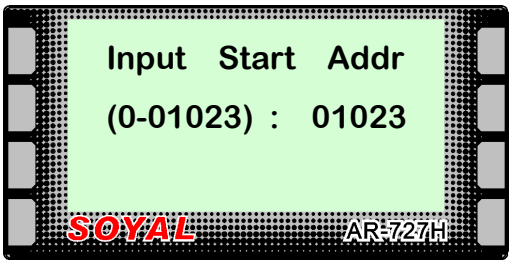
Setting Anti-passback For Multiple Addresses

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 1. Add/Delete and press #

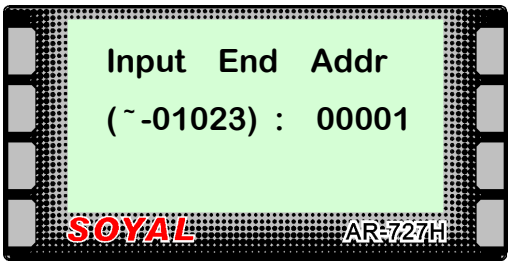
Use F1 or F2 to scroll to 7. Antipass Group and press #

The Display will show:-



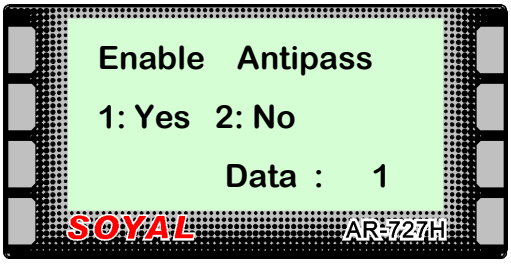
Enter the first User Address and press #

The Display will now show:-



Enter the last User Address and press #

The Display will now show:-



Enter the number required.

The Display will show Succeeded!

NOTICE

For Anti-passback to function properly it needs to be enabled following the programming on page 51 of this manual.

AUTO OPEN ZONE

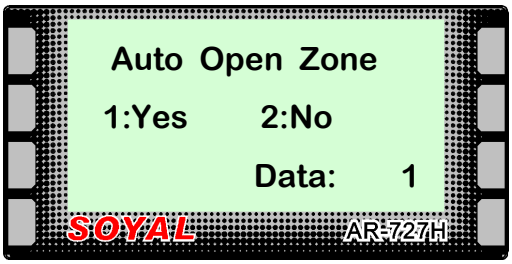
Auto Open Zone Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 2. Auto Open Zone and press #

The Display will show:-



Enter number required.

The Display will show Succeeded!

NOTICE

This function only enables Auto Open Zone. Refer to the next page, Open Time Zone Settings for full programming parameters.

OPEN TIMEZONE

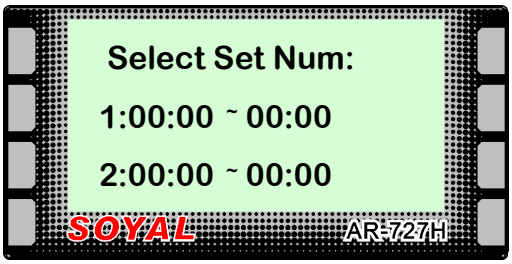
Open TimeZone Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 5. Tools and # press

Use F1 or F2 to scroll to 6. Open TimeZone and press #

The Display will show:-



Enter 1 for time zone 1, enter 2 for time zone 2.

The Display will show:-

Enter a 1 for each day the open time zone is to be active.

DAY	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
ON	1	1	1	1	1	1	1
OFF	0	0	0	0	0	0	0

E.g. Enter 0111110 If active Monday to Friday only.

The Display will show:-

Enter the start time and end time for time zone 1.

The Display will show Succeeded!

Repeat if necessary for time zone 2.

NOTICE

This function will only program time and date settings, refer to the previous page, Auto Open Zone Settings for details on enabling this function.

For Firmware Version 7V6 Onwards, there are a total of 10 time zones. If any more than 1 time zone is required, follow the steps above for programming all desired time zones.

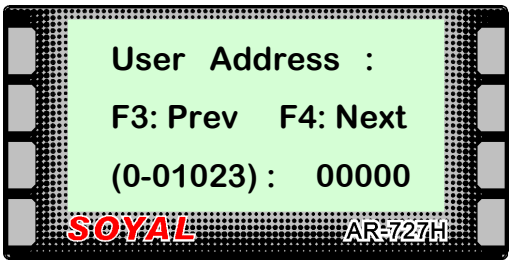
Setting Single Floor Access

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 2. User Settings and press #

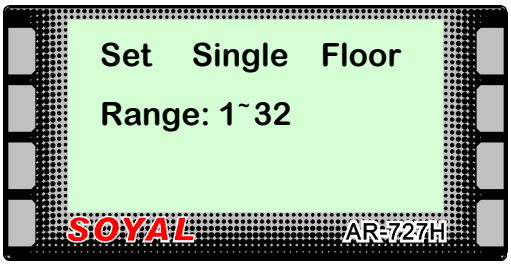
Use F1 or F2 to scroll to 4. Single Floor and press #

The Display will show:-



Enter the user address and press #

The Display will now show:-



Enter floor number required.

The Display will show Succeeded!

NOTICE

This function only programs access to single floors. For multi floor access, refer to the following page of this manual.

LIFT CONTROL

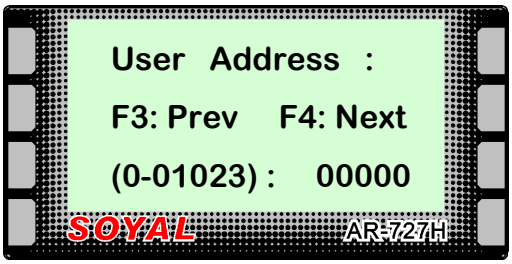
Setting Multi Floor Access

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 2. User Settings and press #

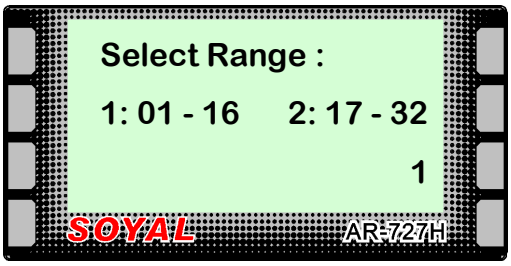
Use F1 or F2 to scroll to 5. Multi Floors and press #

The Display will show:-



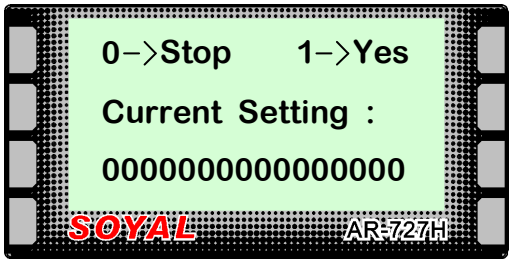
Enter the user address and press #

The Display will show:-



Enter floor group numbers required.

The Display will show:-



Enter the floor numbers required.

FLOOR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ON	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
OFF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

E.G. for access to floors 1, 3, 7, 9, 13, 14, 15 and 16 enter:-

1 0 1 0 0 0 1 0 1 0 0 0 1 1 1 1

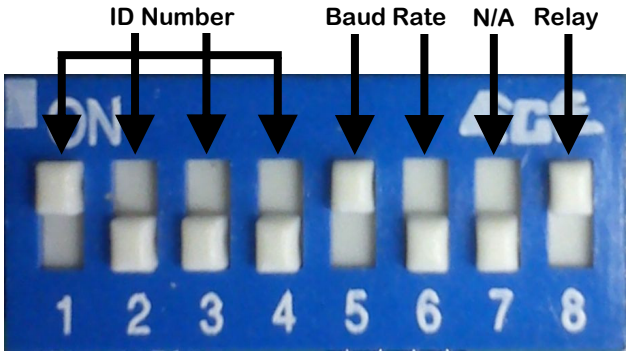
The Display will show Succeeded!

NOTICE

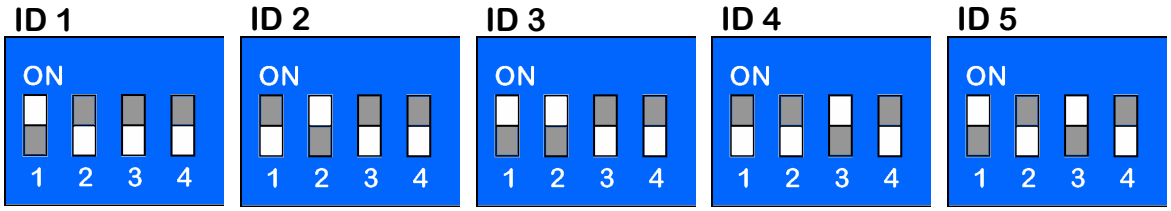
For multi floor access, the AR-401-R016B needs to be set up. The following page shows DIP switch and jumpers settings needed for this function.

Setting AR401-RO16B DIP Switches

Default DIP Switch settings on the AR-401RO16B are as follows:-



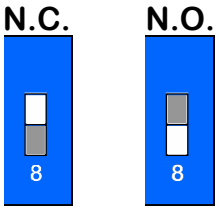
Floor Access is determined by the Node ID, which is set by Dip Switches 1 to 4. The Node ID of the AR-401RO16 must be set up to one of the following numbers.



ID 1 = Floors 1 - 16
ID 2 = Floors 17 - 32
ID 3 = Generally Not Used
ID 4 = Floors 33 - 48
ID 5 = Floors 49 - 64

The Baud Rate is the communication speed between the AR-401RO16 and the associated access controller. The Baud Rate must be set to 4800 (Switches 5 on and 6 off).

All Relay outputs can be set so all Relays are Normally Open or Normally Closed via the DIP Switch. DIP Switch 8 sets the state of all the Relays, in addition individual Relays can be set to Normally Open or Normally Closed separately via the Jumpers on each relay circuit.

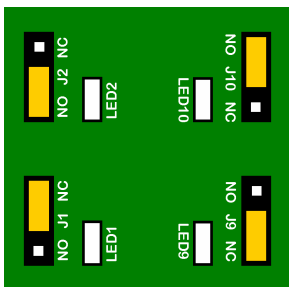


N.C. = Switch 8 on

N.O. = Switch 8 off

Jumper J10 set to Normally Open

Jumper J9 set to Normally Closed (Default Setting)



Jumper J10 set to Normally Open

Jumper J9 set to Normally Closed (Default Setting)

The default setting is with the Switch set to N.C. and the Jumpers set to NC. In this mode the Relays are normally open and normally closed when operated.

Alternative settings are:-

With the Switch set to N.C. and the Jumpers set to NO, the Relays are closed going open.

With the Switch set to N.O. and the Jumpers set to NC, the Relays are closed going open.

With the Switch set to N.O. and the Jumpers set to NO, the Relays are open going closed.

KEY (#) IS BELL

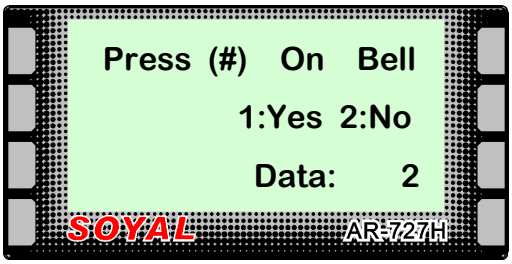
Doorbell Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 4. Parameters (2) and press #

Use F1 or F2 to scroll to 0. Key (#) Is Bell and press #

The Display will show:-



Enter Number required.

The Display will show Succeeded!

NOTICE

When this function is enabled it uses the Alarm Output, which cannot be used for any other purpose.

AUTO RELOCK

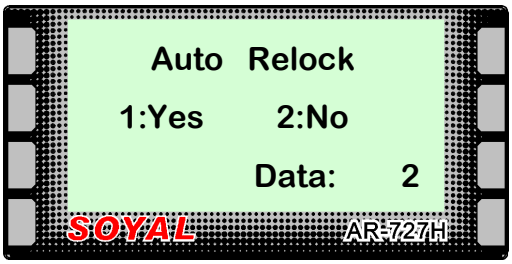
Auto Relock Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 4. Parameters (2) and press #

Use F1 or F2 to scroll to 1. Auto Relock and press #

The Display will show:-



Enter number required and press #

This function allows the door to lock after closing even if the lock release time is still active. This prevents unauthorised people from tailgating when the door is released.

For example, if this function is not enabled and lock release time is set to 20 seconds, the door will be unlocked for the full amount of time, even if the person has already entered and the door shut. If this function is enabled, as soon as the door is closed, regardless of how much lock activation time is left, the door will lock.

The Display will show Succeeded!

DOOR CLOSE TIME

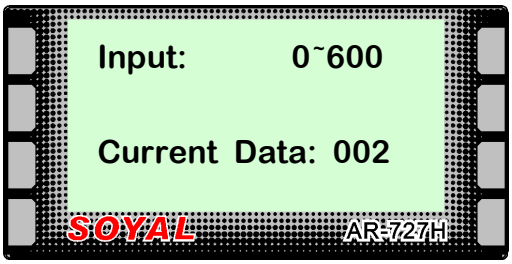
Door Close Time Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 4. Door Close Time and press #

The Display will show:-



Enter the time required in seconds and then press #

E.g. Entering 010 will give a door close time of 10 seconds.

Door Close Time is the amount of time the door can be held open before activating the alarm output.

The door has to have normally closed door contacts fitted for this function to work.

The Display will now show Succeeded !

ALARM RELAY TIME

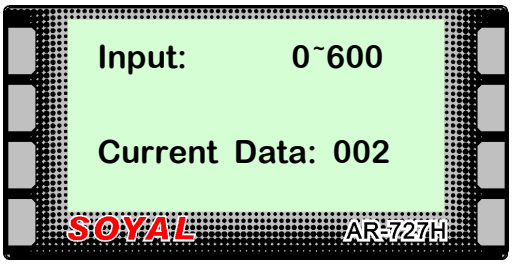
Alarm Relay Time Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 5. Alarm Relay Time and press #

The Display will show:-



Enter the time required in seconds and then press #

E.g. Entering 010 will give an alarm relay time of 10 seconds.

This function controls how long the Alarm will be activated after an alarm event trigger.

The Display will now show Succeeded !

ALARM DELAY TIME

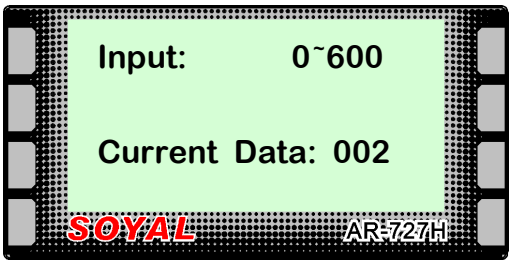
Alarm Delay Time Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 6. Alarm Delay Time and press #

The Display will show:-



Enter the time required in seconds and then press #

E.g. Entering 010 will give an Alarm Delay Time of 10 seconds.

Alarm Delay Time is the amount of time between an alarm event trigger and the alarm activating.

The Display will now show Succeeded !

ARMING PWD

Arming Password Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 8. Arming PWD and press #

The Display will show:-

Enter the desired password and then press #

This function programs the Password for setting the Alarm.

The Display will now show Succeeded !

ARMING PULSE

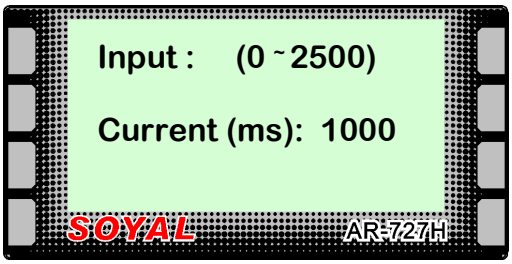
Arming Pulse Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 3. Parameters (1) and press #

Use F1 or F2 to scroll to 9. Arming Pulse and press #

The Display will show:-



Enter the time required in seconds and then press #

E.g. Entering 0100 will give an Alarm Pulse of 0.1 seconds.

The Display will now show Succeeded !

CLOSE & STOP

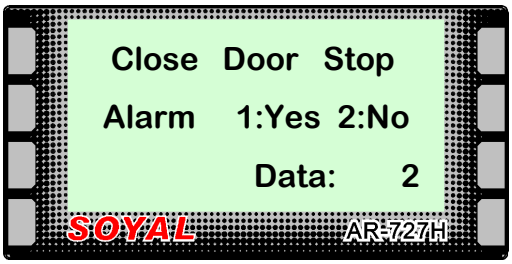
Close Door Stop Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 4. Parameters (2) and press #

Use F1 or F2 to scroll to 6. Close & Stop and press #

The Display will show:-



Enter number required.

This function cuts short the alarm time.
Door contact s need to be fitted for this function to operate properly.
If the alarm goes off, it is stopped by the door closing.

The Display will show Succeeded!

FORCE OPEN..

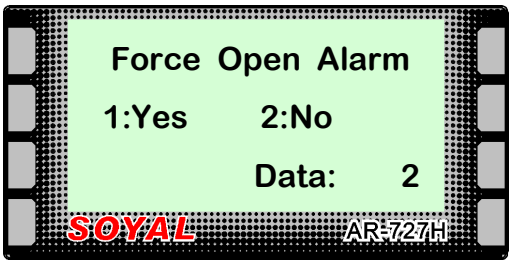
Force Open Alarm Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 4. Parameters (2) and press #

Use F1 or F2 to scroll to 5. Force Open.. and press #

The Display will show:-



Enter number required.

This function will enable the Alarm to activate if the door is opened without using a valid token or egress button.

The Display will show Succeeded!

DURESS CODE

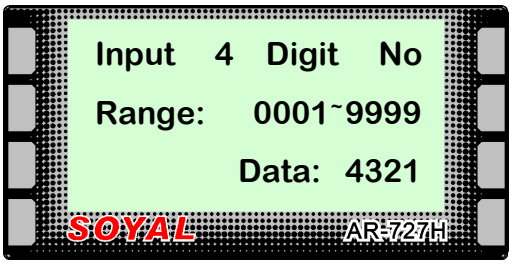
Duress Code Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 4. Parameters (2) and press #

Use F1 or F2 to scroll to 8. Duress Code and press #

The Display will show:-



Enter Number required.

Duress Code only works in Modes 4 and 8 and Networking. Access Mode needs to be set to 2: or PIN or 3: & PIN for this function to work properly.

The Display will show Succeeded!

NOTICE

For this function to work properly, the Serial Port needs to be enabled for Duress Code. For further details refer to Setting Serial Port Output on page 71 of this manual.

LANGUAGE

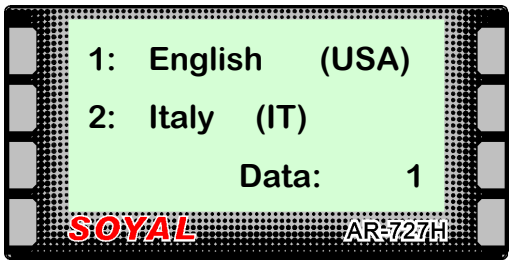
Changing Language

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 5. Tools and press #

Use F1 or F2 to scroll to 1. Language and press #

The Display will show:-



Enter number for required language.

The Display will now show Succeeded !

NOTICE

If the language setting is changed by mistake the easiest way to change it back to English is to enter the following:

Enter Programming Mode *123456# or *MASTER CODE#

Enter 511

The display will show Succeeded !

ATTENDANCE

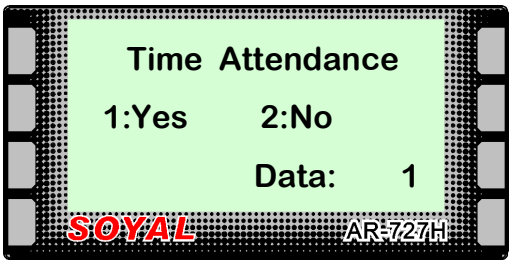
Time & Attendance Settings

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 4. Parameters (2) and press #

Use F1 or F2 to scroll to 3. Attendance and press #

The Display will show:-



Enter number required.

The Display will show Succeeded!

Refer to the chart below for Time & Attendance operation.

Button	Function
▲ F1	In Time & Attendance mode, press once for Duty On, press twice for Break Out.
▼ F2	In Time & Attendance mode, press once for Duty Off, press twice for Break RTN.
◄ F3	In Time & Attendance mode, press once for Overtime On, press twice for Go.
► F4	In Time & Attendance mode, press once for Overtime Off, press twice for Return.

TERMINAL PORT

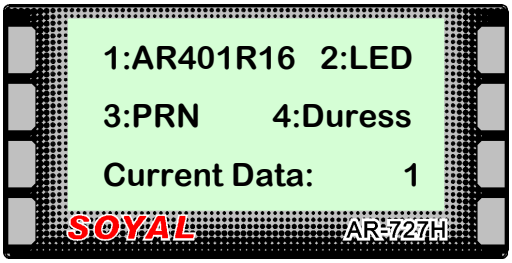
Setting Serial Port Output

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 5. Tools and press #

Use F1 or F2 to scroll to 4. Terminal Port and press #

The Display will show:-



Enter Number required.
This will select the function of the Serial Port output, refer to the table below for details.

Parameter	Function
1: AR401R16	Lift Control Output
2: LED	LED Display Output
3: PRN	Printer Output
4: Duress	Duress Alarm Output

The Display will show Succeeded!

NOTICE

The Serial Port Output can only be used for one of the four options.
For further details on AR401R1 settings, refer to the Lift Control Section on pages 56 & 57.
For further details on the Duress Alarm features refer to the Duress Code Settings section on page 68.

PRINTER OUTPUT

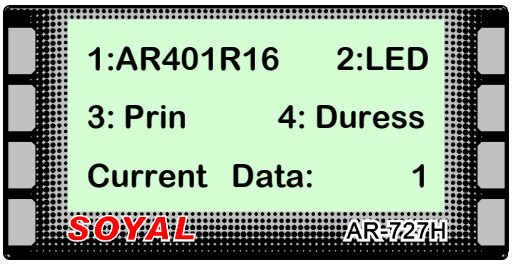
Setting RS-232 Printer Output

Enter Programming Mode *123456# or *MASTER CODE#

Use F1 or F2 to scroll to 5. Tools and press #

Use F1 or F2 to scroll to 4. Terminal Port and press #

The Display will show:-



Enter 3 and press #

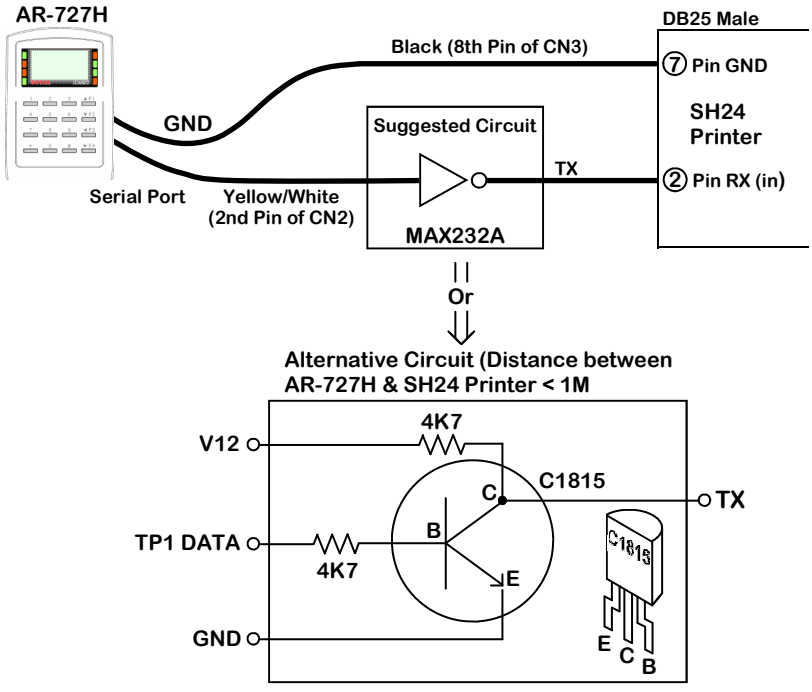
The Display will show:- Succeeded !

Whenever the Controller powers on, the clock is set, a valid token is presented, the exit function is used or the messages are cleared, the following data is printed:-

Date	Week	Time	Card ID	Status
05/03/2009	MON	20:24:16	0000000248	Power On Ver 3.5
05/03/2009	MON	20:24:18	02:	Reader Off Line
05/03/2009	MON	20:24:22	0000000250	Clear Message!
05/03/2009	MON	20:25:01	01:	Set Clock!
05/03/2009	MON	20:25:30	01;00001	Card Access OK
05/03/2009	MON	20:26:20	01:	Egress!

NOTICE

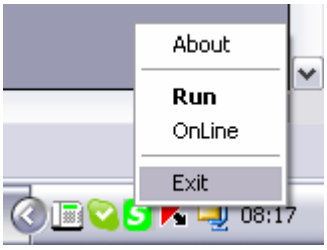
If the Printer Output is required, the circuit shown below has to be built.



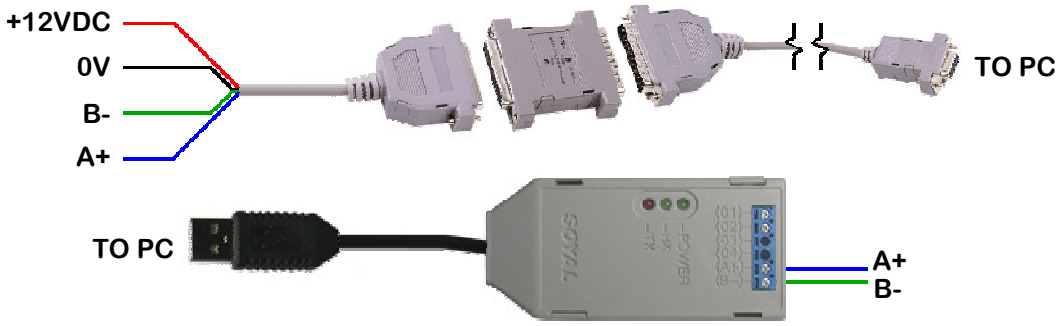
RESETTING MASTER CODE

Resetting Master Code

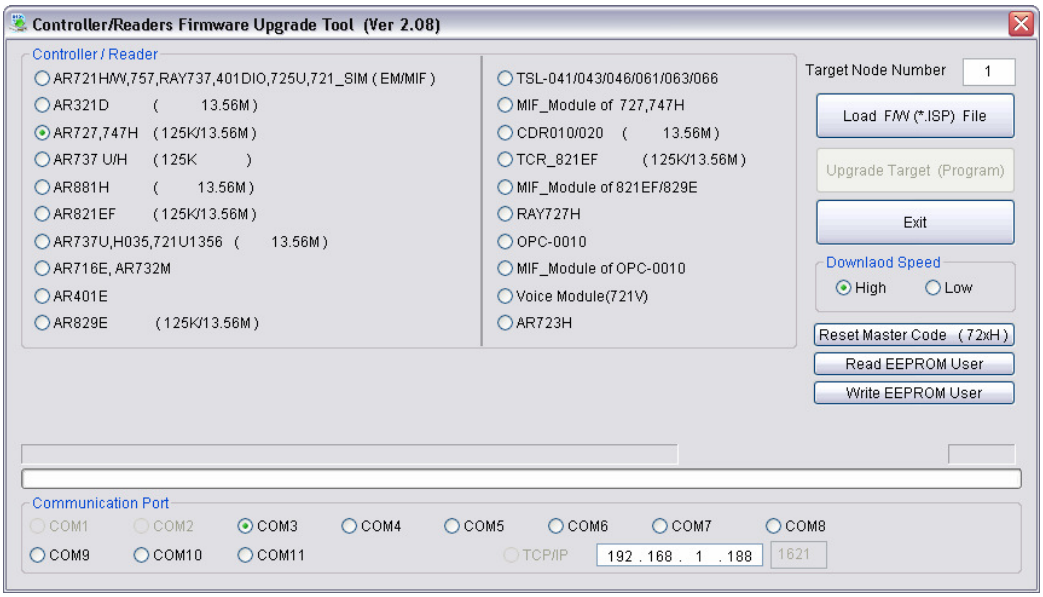
If for any reason the master code needs resetting, you will need to exit 701 Server first. Right click on the 701 server icon in the bottom right of the toolbar and click exit.



Connect the controller to the PC using an AR-701CM RS-232/RS-485 Converter or an AR-321CM USB/RS-485 Converter.



Open ISP Tools and select AR727,747H from the list on the left hand side, then select the relevant COM Port and Node Number of the controller.



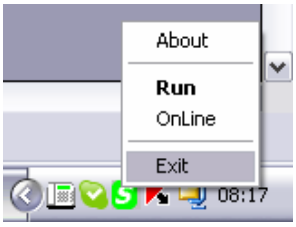
Click on the Reset Master Code button

and the master code will be reset to *123456#.

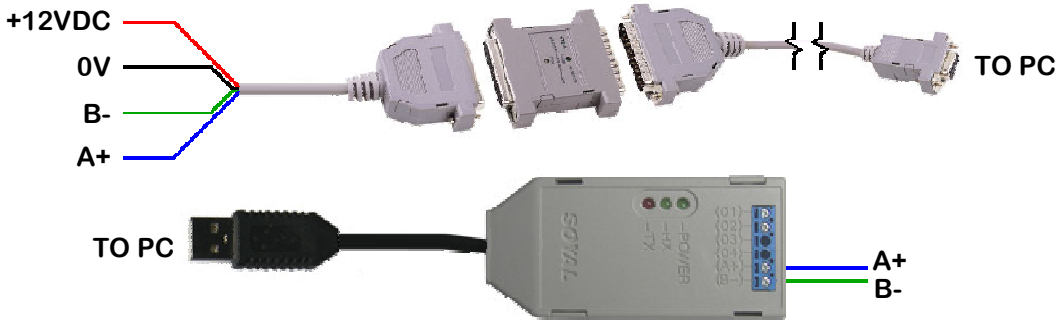
UPGRADING FIRMWARE

Upgrading Firmware

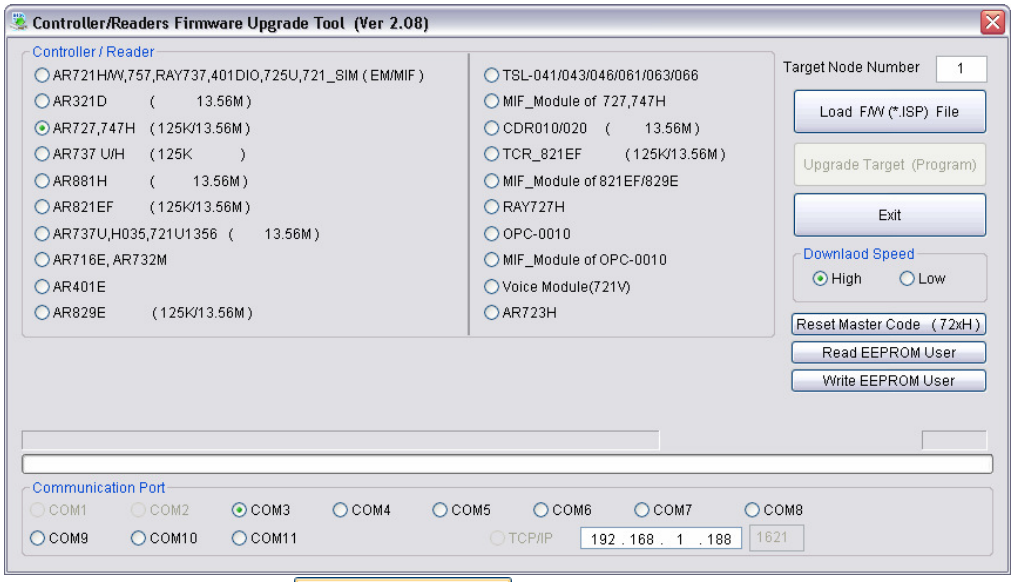
If for any reason the firmware needs upgrading, you will need to exit 701 Server first. Right click on the 701 server icon in the bottom right of the toolbar and click exit.

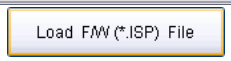


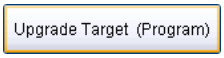
Connect the controller to the PC using an AR-701CM RS-232/RS-485 Converter or an AR-321CM USB/RS-485 Converter.



Open ISP Tools and select AR727,747H from the list on the left hand side, then select the relevant COM Port and Node Number of the controller.



Click on the Load F/W button 

and select the version of firmware you want to upgrade to.
Then click on the Upgrade Target button. 

WARNING

Disconnect the PC and controller from any network before upgrading.
If the controller is disconnected from the PC before the firmware upgrade has completed or there are any interruptions, such as network software updates, it can cause a failure of the main processor in the controller.
This type of interruption *WILL* stop the controller from functioning and the processor will need to be replaced for the system to function correctly.

SPECIFICATIONS

AR-727H Datasheet				
Mode No.	M4	M6	M8	Networking
User Capacity	1,024	65,536	1,024	Depends on Controller
Event Log	1,200	N/A	1,200	
Access Mode	Card only, Card and PIN User no. and PIN	Card only	Card only Card and PIN PIN only	Depends on Controller
Anti-pass Back	Single door	N/A	Single door	Multi-door Anti-pass back (16 doors)
Control Mode in Networking	Mode 4	N/A	Mode 8	Mode 4 or Mode 8
Wiegand	WG32	WG16	WG32	WG32
Lift Control	32 Floor 1024 Users	N/A	32 Floor 1024 Users	32 Floor 1024 Users
Editing Interface	Controller/ Software	Controller	Controller/ Software	Controller/ Software
Power Consumption	< 3W			
Power Requirement	10-24 VDC			
Communication Interface	RS-485			
IP Rating	IP65			
Baud Rate	9600 bps (N, 8, 1)			
Operating Temperature	-20°C ~ +75°C			
DI Input	Egress Button, Door Sensor Arming Switch			
DO Output	1 Door Relay Output			
Transistor Output	Duress/Alarm/Arming LED			
Door Relay Time	0~600 sec.			
Alarm Relay Time	0~600 sec.			
Tamper Resist. Switch	Limit Switch (Form C)			
Anti-Passback	Yes			
Proximity Range	10 - 18cm (125k) / 3 - 8cm (13.56M)			
Serial Out	TTL (4800 bps, N, 8, 1)			
Auxiliary Wiegand Port	WG26/34, ABA-II, OMRON			
Real Time Clock	Yes			
Indicator	1 Bi-Colour LED 1 Piezo Sounder			
Housing Material	ABS			
Dimensions (mm)	126(H) x 91 (W) x 46(D)			
Weight (g)	200 ± 10			
LCD Display	128 x 64 (4 message line, 16 characters each line)			
Compliance	ISO14443A (13.56M only)			

TABLE OF USERS

Name of On-Site Programmer(s):

Installation Company:

DEFAULT MASTER CODE:- *123456#

Tel:

Date:

USER MASTER CODE:

Lock Time:

Lock Type:

User Address	Users Name	Card ID	User Code	Date
		;		
		;		
		;		